XXIII.—*Diary of an Ascent of the River Berbice, in British Guayana, in* 1836-7. By Robert H. Schomburgk, Esq., Corr. Mem. R. G. S.

Deceived by the Caribs, short of provisions, and frustrated in our attempt to surmount the cataracts, the expedition up the river Corentyn was obliged to return to Berbice early in November. On my arrival at New Amsterdam, I lost no time in making the necessary arrangements for ascending the river Berbice, which is but little better known than the Corentyn, and as being the only alternative left me at this advanced period of the season. I was careful to provide a double stock of provisions, as the difficulty of finding a sufficient supply is one of the chief obstacles to travelling in Guayana. My party, with the exception of Lieut. Losack, was the same as before; the boats' crews consisted of Arawaaks, Warrows, and three Caribs, but who were scarcely equal to man the four corials.

Nov. 25, 1836.—Quitted New Amsterdam with the flowing tide, and paddled rapidly up the first or sea reach of the river Berbice, in a south direction for about three miles, when the river turns abruptly in a W. S. W. direction; its average width about half a mile. As the sun rose on the following morning and dissipated the fog, the river's banks presented a continued line of cultivation; thousands of mocking-birds (*Oriolus Perisis*) rose from a wide-branching and aged orinok tree (*Erythrina* Spec.?), where they had roosted for the night, and gradually dispersed in all directions. As we proceeded, cultivation continued on the eastern bank, but on the opposite, Nature had reclaimed her own. What a contrast do these shores now present, when compared with their aspect towards the close of the last century! Then plantation followed plantation as far as the Savonette, the last estate of the Dutch West India Company, about sixty miles from the sea: of the greater number of these scarcely a vestige now remains, yet free labour and capital alone are wanting to restore the former scene of beauty arising from high cultivation, uncontaminated by the baneful influence of human slavery.

Just before reaching the latitude of 6° N., the river makes a circular bend of about a mile in diameter, and at the north-western angle of the bend two small tributaries fall in, close to which is the site of a once-famed plantation named *Daagerad*, now a wilderness. This spot is noted for the height and strength of the *abapúri*, or bore, which is said to rise here from twelve to fifteen feet, and has caused on several occasions the loss of life and property. The peculiar bend of the river will account for its strength. The depth of the channel here, which is much narrowed, is twenty-five feet, but a mud bank projects from the

south-eastern shore off Daagerad full three-quarters of the width of the river. At the south-western angle of this bend a small stream or creek connected with the river Abary, which flows a few miles to the westward, joins the Berbice. It is called *Abari-Itabú,* Itabú signifying creek or expanse of water, and answering to the word Kirahagh of the Caribs on the Essequibo. At night we halted at a cottage called *Noytgedazt* (not expected), and to us so it proved, and we were glad to take shelter from a violent thunder storm which lasted till daylight. The resident here cultivates rice with much success, and he only wanted labourers to enable him to realize large profits; the sample he showed us was very fair. Here as well as elsewhere during our progress up the river, we received great civilities from the inhabitants; to be a stranger insured a welcome.

Nov. 28.—In latitude 5° 50′ N. the river makes another sweep to the N.W. At its southern angle is the site of Fort Nassau, the former capital of Berbice, under the Dutch, at a distance of forty-five miles from the sea, by the windings of the stream. The anchorage here is good in six fathoms water, and spacious, as the fort commands two reaches of the river; current 2½ an hour. As we ascend the river narrows considerably, but retains a depth of from five to seven fathoms. At the south-western angle of this sweep we found the first rising ground at thirty miles direct distance from the coast, formed by hillocks of heaped-up sand, probably the boundary line of the gradual receding sea of a former era; they are about fifty feet high, and called *Hitia* by the Indians; it is this rising ground that gives the river flowing towards the north the abrupt bend to the south-east. Here was formerly the site of a post, now only tenanted by some Arawaaks; four miles south of these sandy barriers the brook Kaderbicie joins the Berbice from the west: it is said to be connected with the stream Abary, by a short portage, while the Herounie unites the Abary with the river Maicony. From Kaderbicie a short path leads across savannahs to the river Wieronie.

Five miles higher we brought up for the ebb tide at the mouth of the stream Moshieba: the campaneros or bell-birds (*Ampelis carunculata*), the daras of the Indians, were tolling in all directions: except in the Conocon mountains, on the Essequibo, I had never met with them in such numbers. Several Arawaaks live in the vicinity of this brook, and a path leads hence to the mouth of the Wieronie, which may be walked in an hour, while it took us nearly five hours to follow the river's course, which at the junction of the Wieronie in latitude 5° 42′ N. is abruptly turned to the S.E. for five miles, when it again assumes its usual north course. At the north-eastern point of confluence is the site of an old redoubt and a church; the depth of the river is here seven fathoms.

At *Peereboom*, one mile farther south, sandy hills again occur, and at their back an extensive savannah stretches to the westward. Peereboom is the residence of Mr. Duggen, an industrious wood-cutter, and from whom we received every civility and assistance. As I deferred the examination of the river Wieronie till our return, we pushed on for *Wickie*, about ten miles farther south, situated on the western bank at the junction of the river of that name with the Berbice. Immediately at the back of Wickie is a marsh, then sand-hills about forty feet high occur, and separate the marsh from the savannah. This spot is the residence of Mr. M'Cullum, who has a very extensive wood-cutting establishment. We halted here to rate our chronometer. The sand-hills are abrupt, and consist of fine white sand; no organic remains have been found in them; they remind me of the sand-hills formed by the waves and breakers along the north-western coast of the island of Anegada.*

The wallaba (*Dimorpha* Spec.?), one of the most useful trees for posts, shingles, and staves, occupies the soil almost exclusively here. On issuing from the wood, two miles to the westward of the settlement, a large undulating savannah partially wooded was before me. Here was an Arawaak settlement of five or six huts; the men were all absent and employed in wood-cutting, the women seemed rather frightened at my appearance. I asked for some water, which was readily presented to me in a gourd, but this done, the woman retired to the corner which she had previously occupied. After having given some small presents to the terrified children, I continued my walk across the savannah until the brook Etonie stopped my further progress. I found some very interesting savannah plants, and returned home almost loaded with them. While absent, some of the Indians had killed a conocoushie or bush-master, the most dangerous snake which Guayana possesses; it measured a little more than six feet, and its formidable fangs were nearly half an inch long.† Mr. M'Cullum told me that several of his men had at times been bitten by them: the remedy he had adopted was scarification, to extract the fangs which generally break off in the wound, and then the application of cupping by means of a glass and some spirit set on fire; oil and strong purgatives are also administered.‡

* See Journal R. G. S., vol. v., p. 28.

† This was probably only a young snake, as in the specimen brought home by Dr. Hancock and preserved in the Zoological Museum, the fangs are fully an inch long, and seven in number.—ED.

‡ Absorption of the virus is often so rapid as to destroy life in a few minutes. None of the reputed antidotes are to be relied on. *Not a moment should be lost:* immediately on the wound being inflicted, let a companion *suck the wound* for an instant; then scarify with a lancet, a knife, or a piece of broken glass; apply the mouth again and *suck the wound* with all his might, squeezing and pinching up the skin and flesh from the bottom of the wound by the thumb and fingers of each hand, and by the use of his teeth. If this be done without any delay, the venom of the

Mr. M'Cullum has a large wood-cutting establishment where often 200 Indians and upwards of fifty negroes are constantly employed by him in cutting and squaring timber, with the exception of the time they are absent to put their provision fields in order: as head of the firm under which the business is carried on, he has resided here for many years, and has had good opportunities to form an idea of the comparative value of Indians and negroes as labourers. He says—"I have invariably found that the Indian sets to work at once with good heart, and remains at it until his task is finished, which is generally two or three hours earlier than the negroes; but not satisfied with this, he continues to work in his own hours, and I know many an Indian, who besides his regular wages, earns from two to three dollars a week. They are also in my opinion more honest. Were the Indian well treated, he would prove an invaluable labourer." That Mr. M'Cullum treats them well is proved by the number which he has collected around him: unfortunately this is not the case with all who employ them. To secure an Indian as a labourer, both foul and fair means have been resorted to: he is supplied with articles on credit sometimes to a large amount, provided he is able to work, being aware that the Indian considers himself in duty bound to work for his creditor until the debt is paid; but many wood-cutters use every means to prevent his getting out of debt by constantly supplying him with more goods and large quantities of that bane, rum; thus the poor Indian is always kept in a state of bondage. This unjust traffic is the fruitful source of misunderstanding between those who employ Indian labourers: if thus an Indian has received money or articles from two or more settlers, which are often put in his hands when intoxicated, it causes quarrels among them, and the Indian's confidence in his employer is shaken, he finds himself harassed, and when least expected, his huts and fields are abandoned, and he emigrates to another district, if not to another colony. The spirit of emigration has lately much increased, and is particularly directed towards Surinam. Mr. M'Cullum observed to me—"Give me a few thousand guilders to spend in presents, and I would entice every Indian in the upper river Berbice, were it my object, to follow me to Surinam." I myself also well know that little will induce the Indian to leave his residence; he is less tied to his birth-place than many other uncivilized nations, and being of a roaming disposition, he abandons his fields to the wild beasts of the forest, and plants his

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most deadly serpent may be extracted without ill results. After absorption of the virus into the system, sweating should be promoted by the use of vapour baths, and by sudorific remedies, as confirmed by the usage of the natives in hot climates, and as practised by the ancients under the name of *Alexipharmics*. See Notice by Dr. Hancock in Quarterly Journal of Science, 1830, and the *Lancet*, No. 340.—Ed.

hut elsewhere on the slightest provocation. I noticed the Indian's habits for wandering in my former reports; while here, I received another proof, in *Kanaima*, a chieftain of the Macúsie tribe, whom I left comfortably settled in a substantial house at Annay, and he had then no thought of leaving his residence and his rich provision fields, at the foot of the Pacaraima mountains; now he is felling trees and toiling to put but a small spot of woodland in cultivation for subsistence. If steps are not taken to cultivate the Indian's good-will, the colony risks the loss of many valuable individuals. If the Indian population is of sufficient interest to the colonist, my humble opinion is, that a protector of Indians should be appointed, with sufficient authority to enforce the fulfilment of a fair contract between him and his employer. The Indian of British Guayana is a heathen, and while the aborigines of all other colonies and countries have had religious instruction offered to them, he alone is neglected; with the exception of the mission at Barteka Point on the Essequibo, established not for the sake of the Indians, the colony of Guayana has not a single institution for the instruction and conversion of the Indian. How great the contrast in the neighbouring state of Columbia, where the advance in civilization is solely due to the exertions of the Roman Catholic missionaries, who have proved that the Indian is capable of receiving, and will gladly embrace religious instruction, if offered to him!

The weather was very unfavourable during our stay in Wickie for celestial observations; the means of six observations gave me as latitude 5° 33′ 47″ N., and the longitude, by chronometer, 57° 38′ W. The width of the river was ascertained to be 145 yards, with an average depth of five and a half fathoms: the tide rose here during the springs five and a half feet. While here we had a proof of the speed of a corial, which went twenty-six miles up the river, and returned within twenty-four hours.

Dec. 4.—We left Wickie, on our ascent of the river. At *Paripi*, four miles farther, the same sand-hills or reefs are close to the river's western bank, with an Arawaak settlement on their top. We stopped at the mouth of the stream, *Kabiribirie*, famed for its cold waters. I found, however, the difference not so great as I should have expected; at five A.M. the air was at 80° Fahr., the water of the river Berbice 80° 2′, and that of the stream, 77°.

Dec. 6. We halted the next day at an early hour at Moracco, where Mr. M'Cullum carries on his wood-cutting establishment. At starting, at 5 A.M., the thermometer was 68°, while the water of the river was 11° warmer, namely, 79°. The trees in the vicinity of Moracco consist chiefly of different species of Wallaba*

* Eperua of Aublet; Panzeria of Willdenow.

(*Dimorpha falcata*) some green-heart or seperi, Mora, Yaruri paddle or roller-wood, Kakarally and Wamara. At two miles' distance from the river commence savannahs, extending towards the river Demerara. They are said to be inhabited by Indian tribes, who never visit the abodes of the colonists: by means of barter they procure powder, shot, knives, palempores, &c., from those Indians who keep up communication with the coast, and give them hammocks, spun cotton, and crab-oil in return. My informants could not give me an estimate of the number of these Savannah Indians, but from their expressions, they must amount to upwards of thirty settlements, probably about 500 individuals. At *Monbacca,* a few miles above Moracco, the river assumed a strange feature ; it became very winding in sweeps not half a mile in diameter, and being narrowed in on either side with patches of a coarse long grass (*Panicum*), and Mocco-moccos (*Caladium arborescens*), it appeared as if there were no outlet: the river turns at a sharp angle, and the distance from shore to shore is not more than thirty-five yards. Its width also became very variable, as at times it widened out into a lake. Here, too, commence the inlets, generally called Itabú by the Indians, and which become very frequent as we ascend. A small island occupied the middle of the first inlet, and on it capricious nature had planted a number of trumpet trees (*Cecropia Peltata*), in regular rows. They were clothed from their base to their summit with a species of convolvulus, while the under-wood was similarly overrun. At Monbacca, on the south-eastern bank of the river, is an Indian settlement. Beyond we came to some steep sandy hills, about 100 feet high, and the highest yet seen of that formation. I scrambled up them and was richly rewarded. The prospect over undulating ground extended to the south-east upwards of fifteen miles; and the number of hills of the same formation as that I stood upon, covered with dense wood, formed one of the finest views of woodland imaginable. Immediately below our feet the placid river spread out as a lake, and distinctly reflected the magnificent trees which margined its banks. Beyond was an immense extent of wood of every tint and hue, from the bright yellow-blossomed *Hakea* to the dark lucid green of the gigantic Mora. The view in the distance was closed by parallel ranges of thickly-wooded hills ; behind us was an extensive savannah, with beautiful slopes, covered with verdure and clusters of trees. A little beyond the river is narrowed to less than thirty yards, and its current much increased, when it again widens, and forms several small islands. At the brook *Yuacari* a path leads to the river Demerara, which is frequently made use of by the Indians. They follow for two days the windings of the brook, and thence one day over land.

Whilst at Wickie I had engaged an Accaway family to accompany me, consisting of the chief, named Andres, two men, four boys, and three females. The men were divided among the corials, while the women and three of the boys conducted their own craft, one being a small corial, the other a woodskin. The Arawaaks and Accaways of the upper part of the river generally use woodskins in lieu of corials. They are made of a single piece of the tough bark of the *Murianara* tree, which grows to a very large size. An incision is made to the extent required in the bark, which is removed by driving in wedges: when loosened from the wood, it is kept open by cross sticks, and is supported at the extremities upon two beams, in order to raise those parts of the woodskin. Vertical incisions at about two feet apart, and a few inches in depth, are then made, and the parts secured afterwards by over-lapping. It remains for several days exposed to the weather before it is fit for use. Though the woodskin is so crank that the slightest motion, when once seated, renders it liable to be upset, I have frequently seen three men and their baggage in one. Their great advantage is, that being flat, they can float where a common corial of the smallest description cannot pass, and so light, that in crossing cataracts, one man can easily carry his boat on his head. When propelled by one man, he squats in the middle, and paddles on either side. Great care is requisite in stepping in or out of them, as if upset, they sink almost instantly, owing to the great specific gravity of the bark. The two boys who conducted the woodskin on the present occasion were perhaps not more than eight years old, and we were highly delighted to see how ably they managed it. The boat seemed to fly through the water, and the juvenile steersman directed its course so well that it never grounded, though it went over places where there was not more than eight or nine inches water. They also were very expert in the use of the bow and arrow; and wherever they thought their well-directed arrow might procure an addition to their meal, the woodskin was halted, the bow strung, and off flew the pointed arrow, and when taken out of the sand, which the water barely covered, we generally observed a fish struggling for liberty. In spite of these occasional detentions, they were always in the van when we were to stop for breakfast, or at our night's quarters.

Dec. 8. We halted next morning for a few minutes at a new settlement, just commenced by a Waccaway family. I was not a little astonished to recognise in the head of the settlement an old acquaintance of mine, called Philander, who had accompanied me on my expedition up the Essequibo. I left him settled with the Macúsies at Waraputa, and now I found him on the banks of the river Berbice. This is another proof of the unsettled habits of the Indian, and his want of attachment to localities. His fields

had been only lately prepared, and the trunks and branches of felled trees were lying about in great confusion. However, he had planted Indian corn, pumpkins, &c.; and though the former was only a few months old, it could vie with what I had seen in Virginia. He expected to reap his first crop in about three weeks. We found him occupied in planting cassada and sugar-cane, both indispensable in an Indian settlement. We were much disappointed on arriving at the Accaway settlement, of which Andres was the chief, and found only a few miserable huts; indeed, they were in worse condition than any I had seen before. The Accaways, or, as they call themselves, the Waccaways, are a tribe of pedlars: they are constantly wandering, and they carry on a trade of barter, and are well known to make hard bargains. I was only able to engage Andres upon condition that I would permit him to stay a couple of days at his place, in order to prepare cassada bread for himself and for us. As this settlement was inconvenient for my observations, I proceeded half a mile further, to a large sand-bank; but the glare of the sun and the heat reflected from the sand were very annoying. The mornings and evenings while here were generally clouded, and even rainy, but about ten o'clock the sun shone out in all its force.

Dec. 10. Thermometer at 6 A.M. 73°; at 3 P.M. 92½°; exposed to the sun, 98°; bulb buried in the sand, 115°.

Hammocks form the chief article of trade between the Waccaways and the more industrious Macúsies. They are generally made of cotton twisted into cord, of which a net-work is formed, with the interstices about six inches wide, or less. At either end strings made of the silk grass or the palmated leaf of the Eta (*Mauritia*) are inserted. The Arawaaks and Warrows prepare their hammocks entirely out of the Eta cord, which they call *Eta vissieri.* The Caribs and Waccaways dye their hammocks red with the Arnotto, mixed with crabnut-oil, prepared from the seed of *Carrapa Guianensis.* I have seen an industrious Indian woman finish a common cotton hammock in a day. The time had now elapsed which I had granted the Waccaways to make the necessary preparations to accompany us; and in consequence of the unfavourable weather for observations, my further stay was of no advantage, though I was anxious to inspect the rate of my chronometer, which I feared was not steady. This settlement is in 5° 2½′ N. latitude, and 57° 58½′ W.

Andres arrived with two men less than he had promised. When we inquired for the stores of cassada bread which he had promised, he made every excuse. Warned by the example of the Caribs, I had sent daily to their huts in order to ascertain whether their women were occupied, and they were always found preparing cassada bread, and large piles of cakes were seen in

different directions: his excuse, therefore, that a number of Macúsies, who were with him, had taken it away, was not believed, and we went to the settlement, to ascertain the truth. No person was to be seen but a sickly woman; all the woodskins were removed, and the woman told us that the Macúsies and some of Andres' own men had left that night on their way to the Demerara river. We were therefore outwitted, and obliged to proceed without a fresh supply.

We had already observed at the Waccaway settlement some blocks of indurated clay: this morning we met the first rocks, probably of trappean origin, in latitude 5° 0′ N., and about 70 miles direct distance from the sea. They were but few in number, and on the river's western bank. The river itself was shallow, and impeded by numerous trunks of trees, which stretched almost across it, and occasionally obliged us to cut our way. As we ascended, inlets became numerous, and were frequently mistaken for the river.

The following morning we passed the brook *Yaríkí*. Its waters are ochreous, and of much lighter colour than the Berbice, whose muddy water formed a strong contrast to the bright yellow of the Yaríkí. The sound of rushing waters made us halt a little further south. We followed the noise, and discovered a small cascade, not unlike that of Itafé on the Corentyn, but the structure of the ledge of rocks over which it falls from ten to twelve feet, was different. The Waccaways called it *Idrue-wadde*, or *Tivuro-nadde*.

Here in lat. 4° 55′ N. at the distance of 165 miles from the sea, measured along the windings of the river, the influence of tide is no longer felt; it was but trifling at our camp, near the Waccaway settlement. The river is navigable to this point for flat-bottomed canoes, drawing two feet water; it now becomes less winding, and has a breadth of about eighty yards: we met further south a ledge of granitic rocks, on which we observed a great number of Indian picture writings. They resemble those I observed at Warapoota * in the river Essequibo, but they were neither so regular nor on such a large scale as those we had seen in the river Cabalaba and the Corentyn. The granite here is red, the surface smooth, and covered with a thicker crust of the

* See Journal R. G. S. vol. vi., p. 321, and vol. vii., p. 287. It is worthy of remark that the Indian hieroglyphics seen by Mr. Schomburgk at Warapoota on the Essequibo, and those on the Berbice and the Corentyn, are all within a few miles of the same parallel of latitude, or rather it should be noted that the ledge of granite or gneiss on which they are engraved here assumes an E.S.E. and W.N.W. direction, and that an E.S.E. line of 100 miles in length would strike the three spots on which the chief hieroglyphics have yet been found in British Guayana; not that this is their limit in America; on the contrary, they have been traced from west to east upwards of 600 geographical miles, and probably are yet more extended. —Ed.

black oxide of manganese, repeatedly mentioned, than I have before observed. I am of opinion that the process which produced it does not go on at present. In many places, from weather or other causes, the outer crust has split, and thus the black coating has been removed: this must have taken place a long time ago, as we found lichens and mosses, and in some instances bushes growing on such parts. Some boulders which are now lying at a distance from the banks of the river, and which are only once a-year subjected to the flood during the inundations, possess the coating equally with those which are constantly exposed to the waters. It would, therefore, seem that the formation of the black coating was coeval with the cause that deposited these blocks.*

Dec. 13.—We soon after passed the first rapid, called by the Waccaways Marlissae, and several others followed in the course of the morning; at eleven o'clock we saw some hills before us, where it was evident that the river had caused a break; it turned almost at right angles, and the point from whence the river issued was so completely hidden, that we were almost persuaded the river's course was here at an end. The Indians from the Corentyn appeared to be of the same opinion; they set up a shout and stared. The Waccaways smiled: they had been here before, and knew that it wound between two hills: rapid followed rapid: in the afternoon we arrived at a point where the contracted river forms an entrance to a natural basin, bordered by hills: it is followed by a second, the entrance to which, through barriers of rocks, is only eighteen yards wide; the basin spreads in the form of a curved lozenge, and is upwards of 530 yards long, from west to east, by 300 yards wide, with a depth of ten fathoms. At its northern bank the river rushes violently over a dyke of rocks, and forms the cataract Itabrú. I at once saw the impossibility of getting the loaded corials over the fall, and orders were consequently given to unload and transport the baggage to the head of the cataract: the difficulties connected with such an undertaking were various; we had to sling our chests, barrels, &c. to poles, and raise them over heaps of boulders, some of which were ten feet high, and their surfaces smooth as glass. The transport of the baggage effected, the question arose, how to get the corials over. The most eligible way appeared to be to force them through the rush of water: on

* This incrustation or burnishing of the rocks is a curious subject for inquiry. Granitic rocks with this black coating have been found in Africa as well as in South America, and specimens from the falls of the Orinoko, from the cataracts of Syene, and from the rapids of the Congo, may be seen placed side by side in the British Museum; yet all, we believe, from rocks subjected to the rapid action of *fresh* water; but the observing eye of Mr. Darwin has lately detected a similar formation at Bahia, in Brazil, occurring near the sea-shore, and only within the limits of the tide's action, where the surf would seem to produce the same effect as the cataracts in the above-named rivers. See Mr. König's letter to Mr. Barrow in App. to Tuckey's Voyage to the Congo.—Ed.

the following morning we made the attempt with the canoe "Maconochie."

Dec. 14.—After the most courageous of our crew, Hendrick, a half Indian, or *Cobb*, had with much risk gained one of the rocks in the middle of the cataract, the end of the boat-rope was thrown to him; he then carried it to a less dangerous place, which the most expert swimmers of my Indian crew had reached meanwhile, and thence they drew the corial by main force through the opposing waters, the steersman having secured himself to the corial, directing her course by means of a large paddle. We were occupied the following day in transporting the baggage of the other corials, and succeeded so well, that by evening there was only one boat below the fall. The situation of our camp was very picturesque; it afforded a prospect over the basin to the hills which encompassed it, one of which, a mile distant, rose to a height of 511 feet (measured trigonometrically), while those contiguous to the basin were from 150 to 250 feet high. The weather continued unfavourable for celestial observations; but from several observations of the sun, when near the meridian, I found the latitude to be 4° 49′ N.; an unsatisfactory observation, for time gave me as longitude, 58°. Our crew having exerted themselves to transport the corials and baggage to the head of the cataract, I had no reason for refusing the request of Andres, the chief of the Waccaways, for permission to dance. The dance of the Waccaways resembles much that of the Caribs; the same monotonous and dirge-like song accompanies it; the motions are almost the same; they move forward sideways, stepping with the right foot; the right hand is placed upon the neighbour's shoulder, and the left hangs motionless by the side; they generally describe a circle in their movements, and when the dance is finished, the leader of the column sets up a shout, which is echoed by the dancers.

Dec. 15.—Early next morning we conveyed the last corial over the cataract. Hendrick, whom I mentioned before, as having selected the most dangerous situation, in the middle of the cataract, lost in the attempt his footing, and was immediately swept away: it was a period of the greatest anxiety from the moment we saw him carried away, until he grasped the rope and was drawn ashore: one foot further and he would have been dashed with violence against a large boulder, which rises ten feet out of the water, and against which the stream rushes with the greatest fury. This cataract has been visited several times by some of the most enterprising colonists: we found their names and initials cut on the surrounding trees, but they did not explore many miles further. After we had passed a second and a third cascade of less height, we observed thickly-wooded hills in the south, higher than any we had seen in the Corentyn: they formed a ridge running south-

east and north-west, resembling a gigantic wall, and terminated to the westward in a peak, estimated at from 800 to 900 feet, and which we named Parish's Peak.*

The river is so much impeded, that we continually met with rapids and cataracts; the progress of our ascent was, therefore, slow, and after two days of the most fatiguing labour, we were only five miles distant from Itabrú. It took us frequently two hours to travel over a distance of 100 yards, and the combined crews had great difficulties in drawing the corials over them. My own crew consisted of individuals of the five chief tribes of British Guayana, named Arawaaks, Warrows, Caribs, Waccaways, and Macúsies. I was surprised to see how well they agreed together: while we were *en route*, the service on which they were employed obliged them to mix with each other; but scarcely were orders given to halt for the day, when the different tribes separated and lodged apart, with the exception of the Macúsies and Waccaways, who lived together: there appeared something peculiar in their manner towards us, which I did not like, and I determined to watch them. As we advanced, the kaymans or large alligators became very numerous. We met them frequently in the middle of rapids, with the head above water, and their jaws partly open; they allowed us to approach close; their tenacity of life is surprising; we fired at one thus floating, and the ball took off the further end of the snout; it received immediately afterwards another ball in the hinder part of the skull, which appeared to have taken effect; nevertheless, the Indians were not sparing in their blows, and when there was not much likelihood of its possessing a spark of life, it was deposited in the bow of one of the corials. Whilst the corial was drawn across the rapids, it was found to be in the way, and as it had remained motionless since it had been put in, two of the Arawaaks got courage and took it up in order to lay it in some other place: they had just effected this, when at one bound it jumped out of the corial into the river, and disappeared. The two Indians, I need scarcely say, looked quite stupified, and never after could be persuaded to touch a kayman. The next day we cut a piece upwards of three inches out of the windpipe of a kayman, and then considered ourselves secure; but to our astonishment, an hour after it was found still alive: a strong knife was driven by main force into its head and brain before it expired. These facts would have appeared to me incredible, if I had not seen them myself.

We toiled on, through rapids, one following the other: the hills continued on our right; those on the eastern bank of the river were of less height. These regions appeared to be the fa-

* After Sir Woodbine Parish, Vice-President of the Geographical Society, who takes a lively interest in everything connected with South America.

vourite abode of the reptile tribe. The guanas were so numerous that, awakened out of their reveries by the approach of our corials, when basking on a tree near the bank of the river, we saw sometimes three plunge at once from a height of twenty feet into the water, and disappear almost instantly: the splash thus produced was heard at some distance, and produced always a cry of disappointment from our Indians at having lost the opportunity of adding to their food. Mr. Vieth shot one five feet nine inches long, including the tail of four feet two inches. Several were caught while swimming in the water. Two of the lighter corials that had preceded us over a rapid had discovered a Commoudie snake (*Boa Draco Gigas*); it was lying inert in a kind of brushwood, and had just slipped its skin. When we came up Mr. Reiss had fired a ball at it without having taken effect, and it was slowly retreating towards the water: at this moment Hendrick jumped ashore, and dexterously slipped a noose round its head, and was on the point of securing it, when the snake turned round and made a motion as if to dart at him: at this attack all his former courage gave way, and he retreated with the greatest precipitation over bushes and rocks into the water. The Indians all stood petrified; they could not be induced even to put a hand to the rope to draw the snake out of the wood, and we ran a fair chance of losing our ropes also, when Mr. Cameron fired a timely ball rather behind the head into the neck, and Mr. Vieth succeeded in catching the head in a noose: it was now quickly despatched, and secured in the boat: it measured sixteen feet four inches in length, and twenty-eight inches in circumference: while skinning it forty to fifty eggs were discovered, which had not yet come to maturity.

The Flora of the river's banks was not much diversified. I observed, however, some plants which hitherto I knew only from description, and which were highly interesting in consequence of their peculiar formation; among them were the *Marcgraavia umbellata* and *Norantea Guianensis* (Aublet): the former was very abundant; it may be called a ligneous twiner, though its branches are pendulous, but they are so more in consequence of the flowers, which being weighty and increased by its peculiar bractea, causes the branches to hang down. It is frequently parasitical, and I have found it in such various shapes, that at the first glance I have mistaken the young branches for a *Lygodium*. The flexible branches are thickly set with alternate leaves of a lanceolate form, and are terminated by flowering umbels, which, with the singular form of the bractea, resemble a chandelier: the flowers are insignificant, but remarkable for the *calyptra* with which the receptacle is covered: as soon as it falls off the stamens drop shortly after. The most curious organs of the plant are, however, the pitcher-shaped bractea, of which there are generally four or five

attached to the flowering stems, and surrounded by the flowers in long peduncles. The bractea is fleshy, cucullate, and hollow; the opening is wide on the top, and decreases in size; it contains a tea-spoonful of a tasteless fluid. Equally curious and more splendid in appearance is Aublet's *Norantea, Ascium Aubletii* (Schreber). Its branches are likewise flexible, and in common with many of the *Guttiferæ*, to which the genus is very nearly allied, it has sub-parasitical habits: the leaves are alternate, and so coriaceous that the upper skin, like a cuticle, may be removed: it flowers in endrisps, and the peduncles have a club-shaped appendage of a deep orange colour; the risp is from ten to twenty-four inches long. The flowers have five petals of a deep crimson, but so small that they are entirely eclipsed by the brightness of the orange-coloured bractea; each flower has one of the bractea appended to its peduncle, and I counted on one of the risps 325: an idea may, therefore, be formed of its beautiful appearance where the climbing shrub overruning some huge tree, many hundred flowering risps are displayed. It forms one of the greatest ornaments of the Flora of Guayana. While speaking of plants and the highly interesting botany of these rivers, I must not omit a species of *Capparis*, which grew along the banks of the river: it was a tree of moderate size, and every afternoon about four o'clock was so much covered with its snow-white flowers, distinguished by its innumerable stamens, that it afforded a beautiful sight. At sun-rise the flower detaches itself from the disk, drops into the water, and is carried along by the stream; we met, therefore, thousands early in the morning floating downwards, and took it generally as a sign that no rapids were in the vicinity, as we but seldom found the tree in such situations.

Dec. 18.—We started this morning early. Our advance, however, was of short duration: while turning round a sudden bend of the river, a series of formidable rapids was before us. On examination I found that they extended in an eastern direction for upwards of a mile and a half, and that, besides five cataracts, we should have to pass several rapids before we came to still water, and should require five or six days to transport corials and baggage over the dykes. I became, therefore, apprehensive that our provisions might give out, and I resolved to send a corial back to Mr. M'Cullum's wood-cutting establishment for a fresh supply of provisions. Mr. Reiss kindly offered to command it, and he left us next morning.

My first intention was to have a road cut along the river's bank for the transport of our effects; but I found it impracticable, the rising ground consisting of numerous boulders heaped upon each other; and as the crevices were only partially filled up with mould, it would have been impossible to place rollers for the conveyance

of the corials; I preferred, therefore, to have the baggage carried over the different ledges of rocks which cause these falls, and to drag the corials after. The cataracts are formed by a continuation of the range of hills which we first met with in 4° 55′ N. lat.; its direction is south-east, and the valleys appear to be parallel nearly: a continuation in a north-western line leads to the Twasinkie and Coomootie* mountains of the Essequibo, which are a north-eastern off-set of the Sierra Pacaraima: a line continued to the S.E. along this range would strike the Marawini mountains in the 3rd parallel; so that the Sierra Acaray would be connected with these hills on the Berbice and the Twasinkie mountains on the Essequibo, which are again joined to the Sierra Pacaraima, about the 4th parallel of latitude. The nature of those rocks and of these on the Berbice is, however, different: while the former consists of granite and its modifications, these on the Berbice are more of trappean origin: the direction of their strata is N. 35° E.: they dip to the west by north, and the strata have evidently been disturbed since their deposition: various examples of cross currents are evident, and the beds are sometimes contorted and cut off by faults, which are filled with a species of wacke of a red colour: the angle of the regular beds amounts to upwards of 80°. The rocks, like those at the lower falls, are remarkable for large holes, smooth inside, and often from two to three feet in diameter: the rocks might almost be called cavernous. Where the current, during inundations, has excavated channels in the soil, I observed numerous boulders of about four feet in diameter, decidedly of the same formation, but much more covered with the black coating before mentioned, and exhibiting ripple marks.

Our transport over these ledges of rocks advanced but slowly; we had to unload and reload the corials four times, and as, in consequence of the shallow water at the rapids, we could only carry half a load at a time, an idea of the harassing work may be formed. Three corials were thus at the head of the cataract in the evening of the 21st, when next morning, at the time the rations were generally distributed, the information was brought to me that the Macúsies and Waccaways, with Andres at their head, had decamped, and were no where to be found. We had been accustomed to their freak of having their camp further removed from ours, than any other of the tribes who were with me, and it was not considered singular when we found that the same was the case at these cataracts: there were no signs that they had had fire during the night, which is an indispensable article to an Indian, and there was no doubt left that they had escaped the previous evening. No colonist had ever been able to induce them to go higher up the

* See Journal R. G. S., vol. vi. p. 362.

Berbice than the fall of Itabrú, and when they saw that it did not offer an insurmountable obstacle to our progress, they expressed their astonishment, and related horrible stories of mountain spirits, gigantic snakes, and thousands of kaymans, which were said to be able to swallow a corial with its crew and baggage, in hopes it might have the desired effect: then came the demand that they might be allowed to dance as before named. The following morning I had heard that the women, who had accompanied them hitherto, were to return to the settlement, and from that moment they must have resolved to leave us secretly as soon as an opportunity offered; and they effected it on the night of the 21st, after having broken open our stores of biscuit and wine. Our crew being already weakened by Mr. Reiss's absence with one corial, and many of those who remained with me being sick, I relinquished all idea of pursuing them.

On the 21st and 22nd of December, the hourly observations recommended by Sir John Herschel were made: celestial observations were very precarious. I had been up three nights in succession to procure a set of lunar distances, but in vain. The means of the meteorological hourly observations on the appointed days were—Bar. 29·758; att. therm. 76° 5′ Fahr.; extern. therm. 75° 7′; wet bulb, 73° 8′; surface of the river 79·7.; the height of the spot above the level of the sea was ascertained to be 245 feet; the lat. 4° 41′ 45″ N.; the long. 57° 54′ 10″; var. 7 east. The night from the 20th to the 21st was one of the coldest I ever experienced at a low situation in Guayana: at two o'clock in the morning of the 21st the therm. stood at 64½°, and the water of the river at 72°. Christmas-day approached while we were at the Cataracts: though but few of our Indians were aware of the occasion and origin of this joyful day, and equally unable to understand what I told them of the birth and atonement of our blessed Saviour, yet I wished that they should participate in some degree in the better fare which we enjoyed on that day. Several pieces of salt beef were shared among them; and though not every one of the Indians would eat it, I found them not so scrupulous as those I met during the former expedition on the Rupununy: they received otherwise additional allowances, and every four men a bottle of rum and some sugar. We enjoyed, therefore, Christmas in our own way; and the proposal that as we could not learn whether these falls had any name, they might be called 'Christmas Cataracts,' was gladly adopted.

Mr. Reiss could scarcely be expected before three or four days more had elapsed. On the morning of the 27th we transported the last corial, which in case of necessity had been kept at the lower cataract, over the rocks. The river was falling, and diarrhœa and severe colds prevailed much among the Indians. I hoped to

conquer it by giving them occupation, and I decided to abandon one of the corials, as since the desertion of six of the Accaways I had not sufficient Indians to man them: we dragged the corial, therefore, on shore, and divided its load among the others. This night proved a sleepless one for us: we were but a short time in our hammocks when we discovered that our tents were visited by the coushi ant or yagerman, by which name the Creoles denominate the *Atta Cephalotes*, or *Migratoria:* they inflicted most merciless bites, and those who attempted to get out of their hammocks were glad to get back again: our poor dogs suffered the most; they could not get out of their reach, and they ran about the whole night howling, in consequence of the severe bites which they received. One of the columns of marching ants had moved up a tree, and whether it was in consequence of the immense numbers I know not, but we heard them dropping upon our tents as drops of rain from the leaves after a heavy shower.

Dec. 28.—Our progress was quite slow: we turned round a sudden bend of the river, when a most obnoxious effluvia greeted our noses, and we observed a flock of that curious bird, the king of the vultures, rising from a dead kayman: we did not succeed in shooting a full-grown bird; a young one was, however, procured, the feathers of which were just about to turn from black to white: this is a curious change, peculiar to several birds. There were upwards of from fifteen to twenty assembled round the carrion: they flew with the noise of heavy wings from branch to branch, until scared by the first shot, they flew deeper into the woods; the opportunity of glutting themselves was too inviting to be abandoned by a rapid flight. We were not very successful in procuring game, but we were indemnified by a large number of fish, which were as acceptable at the period, as they had been scarce for some time past: our crew procured fourteen large *haimaras*, one of the most delicate of the finny tribe in these rivers; their average weight is about 15 lbs. In order to catch them spring hooks are set in the evening, and when the fish, allured by the bait, takes it, it is drawn by the elasticity of the rod out of the water, and there it hangs until it is secured by the fisherman; but it is not man only who is anxious to secure the entrapped fish; among the foremost comes the kayman, which, attracted by the noise of the struggling fish, considers he has as much right to it as the Indian who sets the hook. In this piratical system he is assisted by the *pirai*, called by the Arawaaks *houma*, which slashes piece after piece from the poor captive, and when the fisherman takes his round, he finds nothing but the head attached to the rod. Those who set the hooks should, therefore, be constantly on the alert.

Dec. 30.—The kaymans are very numerous; one, including the

tail of four feet eight inches, measured fourteen feet. It is astonishing how far fool-hardiness sometimes carries the Indian, while at others he shows the greatest cowardice; he acts on impulse. The kayman lay motionless and apparently dead along the banks of the river. Salomon, the chief man of my Warrows, jumped a-shore, and after having given him a few blows with a cutlass across the head, attempted to force its jaws open with his hands: he desisted only by my commands: scarcely had he allowed the kayman's head to drop to its former position, when the monster snapped most violently at the Indian: it missed him, but got hold of an old stump of a tree, where we had to use the axe to get him loose. Mr. Cameron had shot another with a ball through the head, just under the eye: after having violently beaten the water with its tail, it rose to the surface of the river, its white shining belly turned upwards, and we considered it dead: one of the corials was sent to secure the head, but on its approach, new life appeared to start in its veins; it turned itself round, and rushed violently through the water: the foreman of the smaller corial, Hendrick, stood ready with the cutlass: it now turned its attack towards the assailant, and with its formidable jaws open, it rushed towards the bow. Hendrick got so much frightened at this unexpected display of teeth, that he even allowed his paddle, which he had in the other hand, to drop in the water, and fell back without directing a single blow. I instantly desired my large corial to be drawn across to hem the monster in: but it did not await our arrival, and with open mouth came violently towards our broadside, as if it intended to join the party inside, not a little to the consternation of its inmates, then struck against the side of the corial, sunk under it, lashing with its tail, and wetting us all over, and vanished in the deep water.

Jan. 1, 1837.—We made but slow progress; the river narrowed considerably, and numerous trees which, from age or the undermining effects of the current, had fallen across, disputed our advance, so that we were obliged to cut a passage. Nine out of ten were mora trees, one of the hardest woods of Guayana, and which by being immersed in water had increased in hardness: it took us two to three hours to cut through one of these trees, and there were sometimes three to four in succession; we had, therefore, hard work, and none but the women were exempted from using the axe. In order to increase the difficulties, many of our Indians were unfit for any work in consequence of indisposition; the entrance of the new year was, therefore, well calculated to enhance the feeling of disappointment, that we should at that advanced period be within so short a distance of the coast: a succession of adverse circumstances had taken place since we undertook the Corentyn expedition; difficulties beset us from the outset, and

though I battled most resolutely to overcome them, and was determined to advance as long as there was any possibility of making progress, and famine did not threaten us, I could not feel but doubly the mortification on the first day of the year. Such thoughts were passing through my mind when we arrived at a point where the river expanded, and formed on its eastern bank a smooth basin, the current of the river directing its course along the opposite shore. Some object on the southern point of the basin attracted my attention; I could not form any idea of what it might be, and I hurried the crew to increase the rate of their paddling; in a short time we were opposite the object of our curiosity—a vegetable wonder! All calamities were forgotten; I felt as a botanist, and felt myself rewarded. A gigantic leaf, from five to six feet in diameter, salver-shaped, with a broad rim of a light green above, and a vivid crimson below, rested upon the water: quite in character with the wonderful leaf was the luxuriant flower, consisting of many hundred petals, passing in alternate tints from pure white to rose and pink. The smooth water was covered with them, and I rowed from one to the other, observing always something new to be admired. The leaf is on the surface of a bright green, in form almost orbiculate, except opposite its axis, where it is slightly bent in; its diameter measured from five to six feet; around the whole margin extends a rim, from three to five inches high, on the inside of a light green, on the outside a bright crimson. The ribs are very prominent, almost an inch high, and radiate from a common centre; they consist of eight principal ones, with a great many others branching off from them; these are crossed again by raised membranes, or bands, at right angles, which give the whole the appearance of a spider's web, and are beset with prickles; the veins contain air-cells like the petiole and flower-stem. The divisions of the ribs and bands are visible on the upper surface of the leaf, by which it appears aerolated. The stem of the flower is an inch thick near the calyx, and is studded with sharp elastic prickles about three quarters of an inch in length. The calyx is four-leaved, each upwards of seven inches in length and three in breadth; at the base they are thick, white inside, and reddish brown and prickly outside: the diameter of the calyx is from twelve to thirteen inches; on it rests the magnificent flower which, when fully developed, completely covers the calyx with its hundred petals. When it first opens it is white with pink in the middle, which spreads over the whole flower the more it advances in age, and is generally found the next day of a pink colour; as if to enhance its beauty, it is sweet-scented. Like others of the tribe, it possesses a fleshy disk, and the petals and stamens pass gradually into each other, and many petalloid leaves may be observed which have vestiges of an anther. The petals next to the leaves of the

calyx are fleshy and possess air-cells, which must contribute to the buoyancy of the flower. The seeds of the many-celled fruit are numerous, and embedded in a spongy substance. We met them hereafter frequently, and the higher we advanced the more gigantic they became; we measured a leaf which was six feet five inches in diameter, its rim five and a-half inches high, and the flower across fifteen inches. The flower is much injured by a beetle (*Trichius* Spec.?) which completely destroys the inner part of the disk; we have counted sometimes from twenty to thirty in one flower.*

Our progress next day was scarcely two miles, the trees which barricaded our passage were so numerous. While the men were employed cutting through a large mora tree, information was brought that a herd of *Kairounies,* the large peccary or Indian hog (*Sus cystiferous major*), was feeding at a short distance from the river: all our guns were immediately put in requisition, and off we started; Acouritch, the Carib, armed with bows and iron-headed arrows in the van. I first came up with them, and found them in a pool of water, where they wallowed in the mire like our domestic hog: one appeared to stand watch while the rest enjoyed the muddy bath, the young ones of various sizes keeping the middle. When I was at a distance of fifteen yards the sentinel observed me, the bristles on the back rose, and it turned towards me, chattering formidably with its teeth; in the next moment it lay prostrate in the mud pierced by a rifle ball; but how can I describe the bustle, the rush, and the chattering of the tusks of upwards of 200, which immediately after were seen to seek security in rapid flight in the opposite direction! An Indian, who had come up by this time, fired after them and shot another, and the retreat was now perfect. I had loaded again, but hesitated a moment to wade through the swamp; the Arawaak, Mathias, observed it, and he requested me to give him my rifle and ammunition, and off he started with it. I heard four or five

* Mr. Schomburgk has sent to England a drawing of this beautiful flower, desiring that, if permitted, it should be presented to the Queen, with a humble request that it might be dedicated to Her Majesty and bear her royal name. To this Her Majesty has graciously consented, and has also given permission that this flower should be known by the name of

"VICTORIA REGIA."

Mr. Schomburgk will be highly gratified to learn that his discovery—the most beautiful specimen of the Flora of the western hemisphere—will henceforward be most appropriately distinguished by the name of our youthful sovereign, herself "the ROSE and the expectancy of our state."

The Society is indebted to Dr. Lindley for his kind and liberal offer to write a fuller description, and to superintend the engraving, of the flower, a copy of which has just been presented to Her Majesty.—ED.

shots shortly after at some distance on my right, and while yet calculating how many of them might have told, I heard a rushing noise, like a whirlwind, approaching through the bushes: the peculiar growl, and that awful clapping of the teeth did not leave me long in doubt as to its cause; it was evident that the herd had divided, and were coming directly towards me. I stood alone unarmed, and had not even a knife to defend myself. I know not yet how I climbed the lower part of a mora tree, when by they rushed, their muzzles almost sweeping the ground, and their rough bristles on the back standing erect: they might have numbered fifty. They came and passed like a whirlwind, and before I had recovered from my astonishment, I heard them plunge into the river and swim over to the opposite bank. The other hunters had not been so fortunate as I expected; excitement or fear made them miss where it would have appeared almost impossible. Including the one I had shot, three had been killed with guns, and one with an arrow: they were a most welcome addition to our stock, as we were already obliged to economize, and our endeavours to procure fish had not been successful.

The kairounie has been so well described that it is superfluous to dwell further on it, but there is an anatomical difference in the internal structure of the skull, which I do not find noted in the works on natural history which form part of my travelling library; it possesses only a small quantity of brain, which is protected by a double bone. Naturalists observe that it does not love to wallow in the mire; I found the whole herd almost buried in it, and we discovered afterwards another pool of water, where the marks of their having wallowed were evident enough. The liquor which flows out of the gland is highly offensive, and peculiar to both male and female; the latter produces only two young ones, frequently only one: the cry of the kairounie, when full grown, is a grunt, but that of the younger ones resembles the bleating of a goat.

Jan. 2.—The indisposition of the crew had so much increased that I had not sufficient hands to paddle; we were therefore obliged to encamp until the health of the party was re-established.

Jan. 4.—The report of two guns had been heard while I was absent on a hunting excursion, and Mr. Reiss was with us an hour after. Mr. M'Cullum, from whom the expedition received so many attentions and assistance, had most readily come forward to advance the desired quantity of rice, salt-fish, &c., and the corial had succeeded in passing the cataracts without accident. We had a severe thunder storm in the afternoon; while I was occupied observing the changes of the barometer and thermometer during its approach; the lightning struck a tree just on the opposite side of the river; the clap followed the lightning instantly,

and the reverberation was so severe that man and beast appeared startled. The barometer did not show any fluctuations; the thermometer, however, fell from 81° to 75°, when the rain fell in torrents; the thunder continued the whole night. We could not flatter ourselves with being particularly favoured by the weather, but it had not come to extremes as yet. I augured nothing good from its present appearance; the atmosphere was heavy and constantly clouded in the north-west: we were then so near to the change of the moon, which generally has a decided influence upon the weather, that I apprehended the setting in of the rainy season, and my surmises proved unfortunately correct. Active medicines had partially restored so many of the Indians that I was able to continue our journey.

Jan. 6.—We passed occasionally detached ledges of rocks, of the same nature, dip, and direction, as those at the Christmas Cataracts. The river narrowed considerably, and we were again under the necessity of having recourse to axes and cutlasses: its width amounted frequently to scarcely more than ten yards, while its current, sweeping at the rate of two knots over a sandy bottom, and partly covered with pebbles, was almost too much for my weakened crew—it required every particle of strength left in their sinews not to retrograde. The river frequently formed inlets, which were studded with islets of different shapes, covered with numerous palms, that bade defiance to any intruder by their sharp prickles, which were often three and four inches long.* Indeed the river was bordered by a dense forest of palms: they scarcely allow any other plant to grow up, and usurp all the moisture, air, and light. The under stratum of the soil, from lat. 4° 20′ to 4° 10′ N. is highly retentive; while, on the surface, it consists of a chalky marl, mixed with mould: it is particularly qualified for the cultivation of rice; the more so, since it is annually inundated and enriched by the deposition of mud, which would render manure unnecessary. If put under partial drainage, I am persuaded that these lands would produce two crops a-year.†

The current was now frequently our only guide for keeping in the stream, and with the greatest attention we were sometimes at a loss what direction to take, as occasionally the course of the river was entirely covered with bushes. The beautiful water-lily covered whole reaches with its singular leaves, nibbled at times by the Muscovy ducks; while numerous spurwings, sultana hens, and other aquatic birds, were walking on the surface of the leaf in search of insects.

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* The Corrozo, from which a delicious wine is procured in the Orouoko.

† There can be little doubt of this, as we learn from Dr. Hancock that Mr. Bilstein, on the Essequibo, got two crops of rice and three of Guinea corn per annum. —Ed.

On a cursory glance, the explorer might have fancied that he had here reached the sources of the river, and that it rose in a lake; whence it issues in a stream not more than five yards wide. How astonished would he have been, had he been told that a few miles farther south the river widens again to 150 yards! As already observed, the stillness of the water induced me to search for another outlet; and, after some delay, we had cut a path for our corials, and were once more on a fine stream, unimpeded by bushes. We here found the iron-wood tree, and a new species of *dipterix*, the flower of which has a sweet perfume, resembling violets: it is called by the Indians *Itikieri, buri-bally;* the wood is speckled like a tiger's skin, and is sometimes brought to the colony, where it fetches a price of *5s. 9d.* per foot. At the first trial which our axes made on the iron-wood, a tree lying across the river, they rebounded. After a few blows the axe almost resembled a saw, and if we had not possessed some American axes we should have been obliged to drag the corials over land. As a strong contrast to the sweet-scented dipterix and the hard iron-wood, grew a tree superior in size to both, and when struck by the axe it diffused a most unpleasant smell: it was very soft and white, and the outer bark grey.

Jan. 8.—In lat. 4° 20′ N. we met with numerous boulders of granite of the same composition as those at Achramoucra, in the river Essequibo, in 4° 20′ N. lat., and at the cataracts of the river Corentyn, 4° 21′ N. lat.: the tract preserves, therefore, its east and west direction; the boulders were much rounded, often spherical, and gigantic in size.

Our pleasure at the open river did not last long: again it narrowed, and dwindled in width to about ten yards. The islets and palms of the former tract were wanting, but they were amply replaced by lianas, chiefly *mikania, convolvulaceæ*, and a spreading bush which might be called the mangrove of the fresh waters. Our progress was now connected with constant toil: with the most harassing labour, we scarcely made two miles in a day; and, in order to avoid cutting through trees which it would have taken us a day to accomplish, we preferred unloading the corials, and drawing them overland. I resolved now to halt every alternate day, and to send parties forward to clear our path. As if to render our progress to the south still slower, the river meandered in short turns, and the constant rain which had set in at the change of the moon had caused its banks to overflow. Five weeks had now elapsed since we had left the last human habitation, and, as we had not been able to increase our stock of provisions since, I was under the necessity of curtailing the allowance. The river had swollen rapidly, and game and fish were now scarce, while the difficulties increased with every step that we advanced. I

observed dissatisfaction among the crew; they were tired of proceeding further, and I had to use energetic measures to have my orders enforced.

While some of the Indians were hunting, they met a pack of wild dogs: our own dogs secured one, and, as Indians are generally fond of crossing their breed, Acouritch tied it to a tree, in order to take it with him when he returned from the chase; but the dog gnawed his rope, and was off before our prudent huntsman could execute his design. Hendrick, who had accompanied Acouritch, told me that the pack might have amounted to thirty, or more: in figure, he likened them to the bull-terrier—the ears rounded and hanging, the colour reddish brown. I was sorry that I lost the opportunity to see one of these animals, of which I had heard so much: they are sometimes met with near the coast, and always hunt in packs.

Jan. 22.—Our difficulties appeared to increase with every hour, and every step became more toilsome. The river is quite narrow, and winds its course through a wilderness, margined by prickly palms: it is almost entirely grown over by a species of solanum. We were now obliged to man one of the smaller corials with some of the ablest men, with cutlasses and axes in their hands, to clear the greatest obstacles out of the way, while we followed with the other corials, which were forced forward by long poles. We constantly came in contact with the bushes on either side, and were frequently molested by ants, centipedes, spiders, and scorpions, which secreted themselves in the rubbish left on the bushes by the last inundations, and inflicted the severest bites on us; or we received a brush over our face and hands by one of the prickly palm-leaves, which never failed to leave marks of its passage. The Indian crew fared worse in this respect: we were partly protected by our clothes, but their stock had given out long before this, and they had no protection whatever. The banks, originally low, were under water, in consequence of the continued rains, and it frequently proved difficult to find a place where we could sling our hammocks. It was late in the afternoon when we were still on the look-out to find a dry spot. We sent one of the Indians of the mixed race up a high tree: he gave us information that, so far as the eye could reach, the swamps continued—but sorry comfort for us weary travellers! Acouritch was hallooing most lustily, in order to try in what direction his voice resounded, to serve as an indication of dry land; but in vain. After sunset, and when we had made up our minds to remain in the corials, a small spot, which the water had not yet reached, was discovered. It rained heavily, and as the water was growing, we were glad when we could leave next morning, without having been dislodged and not fur-

ther molested, except that we had to wade to the place where we had landed on dry ground the previous evening.

Jan. 24.—I received this evening most unpleasant information. A Warrow Indian, who was rather a favourite, informed me that mischief was going on in the camp. For some days past I had discovered rebellious conduct, and had previously observed disobedience of orders; but they never showed it so openly as during the last two days. I was well aware that the generality of the Indians were disaffected to the further progress of the expedition, and I had even proof that the coloured people were equally to be distrusted. All endeavours to procure game or fish proved in vain; and the dreary prospect that, during the continuance of the rainy weather, no better success awaited us, had laid me under the necessity to reduce our daily allowance to little more than six ounces of rice for a man and five for a woman. I was now informed that the Caribs, with Acouritch at their head, had instigated the others to take the corials away, and to leave us during the night; and if we should show resistance, to tie us with hammock-ropes to the trees. I do not know how far Acouritch might have succeeded with the Arawaaks: however, I was aware that my own boat's crew, the Warrows, would not suffer their fidelity to be tampered with. The young Warrow was therefore sent to give me information. The intelligence of this treachery caused me great uneasiness: I did not know how far the disaffection might have spread, and I knew there was no individual in the camp who did not dislike proceeding farther. I informed Mr. Reiss of the circumstance, and we decided to be vigilant, and keep a strict guard upon the corials and ammunition. Acouritch must have had knowledge of his plot having been discovered. They had their camp that night not far from my tent. I saw their fires burning through the night, and was therefore not a little astonished to find, next morning, that they had deserted about midnight. We had heard the barking of one of our dogs at some distance from the camp. Mr. Reiss reconnoitred, but, discovering nothing unusual, he retired to his hammock: misled by the fires, he supposed the Caribs in their hammocks. They had taken with them some of our best cutlasses, iron pots, camp-kettles, &c. We found no traces of the direction they had taken, but I concluded that they might have attempted to reach the Corentyn by pursuing an eastern direction.* The forests, which we had passed during the latter week, were full of a species of mountain cabbage-tree: he might have therefore calculated that, as soon as he had cleared the swamps, they might partly live on it; and the seeds of another palm were then ripe, which the Arawaaks call *caria*, and the

* Both the rivers, Corentyn and Essequibo, are only fifteen miles distant from this point.—Ed.

Caribs *muro muro,* and of which the Indians are very fond. Though they might save themselves from starvation, the adventure was perilous enough, and proves the daring spirit of that tribe.

Our situation became more critical every day. We were now reduced to eleven effective men, which were to be distributed among four corials. I was still bent, however, on pushing onward.

Jan. 26.—In the course of the day we found the river widening like a lake, bordered by low bush and partly grown over with the beautiful *victoria,* the pride of my botanical discoveries, and which grew here so luxuriantly that some of the leaves measured six feet five inches in diameter. A species of *polygonum,* and numerous grasses of different tints, covered the river so completely, that only a small bright space, where the current was strongest, was left open. Alas, our joy did not last long! It narrowed, and we had again to cut through prickly palms and numerous prickly *solanums,* so rank in growth, that at times we had to drag the corial by main force over them.

Jan. 27.—I had not been able to procure any celestial observations since January 22nd, when I had found, by meridian altitude of the sun, that we were in 4° 1′ N. lat., consequently nearly in a parallel with the junction of the Rupununy and Essequibo. I determined, therefore, to advance for three days more, during which time I hoped to be able to make from six to ten miles southing, when it was my intention to encamp, and cross over by foot to the Essequibo. I communicated this resolution to my companions, and it spread quickly among the Indians, who received it with the greatest joy. At the back of the encampment our Indians had found many of the palms, previously mentioned, in seed, and they indulged freely, to indemnify themselves for past privation. The *caria* grows in bunches of from twelve to twenty inches in length, and nine to ten in diameter. Each nut is about an inch and a half long, round at the top, and pointed towards the end, where the fruit is sessile; the outer rind is provided with prickles; the kernel is eaten, and tastes, when young, somewhat like cocoa-nut: it is also roasted on the fire. The caudex is low; the leaves, or fronds, are provided with long prickles; and it is remarkable that I do not recollect having met with this palm previously, either in the Corentyn or the Essequibo. I think it is *Astrocaryon murce murce** (Mart.). We observed in the vicinity of our camp some

* I have frequently found the seeds of this palm on the low shores of the island Anegada, where it has been drifted by the current: it is vulgarly called Sea Cocoa-nut, though quite different from the Cocoa de Mar (*Lodoicea Sechellarum*). During inundations, the seeds are swept from the land, carried by the rivers to the estuaries, and there taken up by the currents.

gigantic conical ant-hills, ten feet in height, constructed of the soil, a mixture of sand and clay; the interior is built with particles of wood, leaves, and flowers; with the entrance from three to four inches in diameter, protected by dry leaves, cemented with clay and a glutinous substance. The ant is of a reddish-brown colour; the body from four to five-eighths of an inch in length, and it is called by the Arawaaks *haracorlie*.

The working ant, or labourer, has four prickly points on the back, and two on the head, and resembles much the Coushi ant (*Atta*), only being smaller.

Jan. 28.—We wound our way slowly through the meandering river, margined by prickly palms, and encroached upon by numerous *Marantaceæ*. Shortly after, passing a point, we found that the river gradually widened, and showed a fine sheet of water upwards of 150 yards broad: the river was similarly covered with those plants which I mentioned on another occasion: their number was, however, increased by a very pretty *Pontederia*, and another plant which was highly interesting to us in consequence of its leaves resembling the rare four-leaved clover, which is considered a lucky omen, according to popular belief, if picked up by accident, and not sought after. I saw neither blossoms nor seeds to become acquainted with the name.*

The stream preserved its width of about 150 yards for several miles, and I could almost fancy we had entered a different river: as this sudden expansion extended likewise to the east, where we issued from the underwood, we pursued its course in that direction for some miles, until we were arrested by thick wood, and found we were exploring an inlet only. We observed some granitic boulders in the river. The latitude observed at noon was 3° 58′ N.; our progress south, therefore, since January 22, had been scarcely three miles. Where the river narrowed again the current ran two knots: shortly after we were rejoiced to find it spreading to about thirty yards, and from its high banks on both sides we hoped it might so continue, and pushed on rapidly till evening, when I saw what I considered to be five or six land turtles, ranged on an old prostrated trunk on the river's left bank: such an opportunity for a good meal, in our straitened circumstances, was not to be neglected; we immediately halted, and on landing the Indians drew my attention to some bushes which had been recently cut with a knife: we now cautiously approached the hoped-for turtles, but to our mortification we found that they were only shells. We saw remains of former fires, and it was evident that I had found by accident the path which leads to the Essequibo. Some of the Indians discovered a raft of *mocco-*

* Marsilea quadrifolia, possibly.

moccos on the other side of the river, whence we concluded that the slaving expedition contemplated by the Caribs had been carried into execution shortly before our arrival; there were also symptoms of a prolonged encampment here.

Jan. 29.—The next day was the day of rest appointed to man; we remained, therefore, the more readily in our encampment, as circumstances had not always allowed us to rest on the Sabbath.

Jan. 30.—We started at nine o'clock by land in a S.W. direction to cross over to the Essequibo. Our party was Mr. Reiss, Cornelius, and five Indians to carry our hammocks and the necessary provisions. The path was barely twelve inches wide, marked by notches in the trees: numerous trees had fallen across it, and our limbs, cramped in the corials for the last two months, were very stiff. The soil was extremely fertile, and, generally speaking, the ground preserved the same level. We crossed several swamps in which the manicole palm grew most luxuriantly; I noticed likewise that strange species of palm, which I had seen on a former occasion in the Conocon mountains, *Geonoma* Spec.? called by the Arawaaks *Buba:* it here reaches a very great height, has but few leaves, and obtuse, as if they had been torn off at the end: single specimens of it are to be found near the coast, probably transplanted thither, but they are very scarce. After an hour's walk from our camp we passed a large tree with a smooth bark, called by the Caribs *Okheri-prima,* in which several marks had been cut by Indians. The woods which we traversed consisted of magnificent trees; the soil, springy and of a rich vegetable mould mixed with sand, would produce anything. We saw the stately Crabwood tree (Aublet's *Carapa Guianensis*), the Souari (*Pekea tuberculosa* of Aublet), famed for its delicious nuts, which we only regretted were not then in season; the *Yaruri,* or paddle wood, which is curious, as its trunk appears as if it consisted of a number of slender trees grown together. The bark is dark-coloured, with a few light greyish spots; the seed is flat-shaped and rugose, and I conceive the tree to belong to the trumpet-flower tribe (*Bignoniaceæ*): the wood is very elastic, and, in consequence of the peculiar construction of its trunk, it is much esteemed by the Indians for paddles. I have frequently seen the Indians split one of the flutes off, and finish a paddle in the course of a few hours, having no other tool but a cutlass and common knife: it was then handed to the woman, who painted it with *Roucon* and *Lana.* We observed likewise the *Amara* or *Wamara** tree, of which the Indians make their war-clubs. The wood is very hard and dark-coloured. The *Wamara* is a species of *Lecythis;* its seed-capsules are shaped like an extinguisher: it is a large

* Bannia of the Arawaaks?

tree with a light-coloured bark. There were also many others which astonished us by their size, and of which the Indians make their corials and canoes. At an hour and a half distance we found rising ground, about forty feet high, assuming a N.W. and S.E. direction, and observed numerous rocks, from the size of a pigeon's egg to that of a large boulder: they were crystalline, weighty, and appeared to be impregnated with iron. The soil, exposed by an uprooted tree, consisted of ochreous clay mixed with fragments of quartz, rounded by attrition, and of the same nature as those we had seen on the savannahs of the Pacaraima mountains.

Mr. Reiss, who followed with some of the Indians in the rear, had fallen in with a herd of kairounies and killed two, but as our men were already loaded, we could carry only one: we were about to continue our march, when we heard the report of a gun in the N.E.; a second followed, and a third. There could be no doubt that it was the preconcerted signal for our speedy return; only an urgent case would have induced Mr. Cameron to fire the signal: we therefore retraced our steps. I headed the party, and we had not far advanced, when I saw the herd of kairounies before us: they did not perceive me, and were in regular line of march, the young walking under the belly of the mother; we shot two more. As there was no time to be lost, they were cleaned and hung up in a tree, to be sent for in case circumstances permitted it. I and Solomon, one of my faithful Warrows, now took the vanguard. On the road numerous sinister causes for our recall suggested themselves to my mind, and in my anxiety I distanced all my party except my faithful Solomon. I heard the hum of voices, and cautioning the Indian to go softly, we listened. "They are Caribs," he whispered in my ear. I told him to hearken again— "Caribs," was again his reply. I stole somewhat nearer, and had a survey of a number of red hammocks. It is then true, thought I to myself, the camp has been surprised, Mr. Cameron and Mr. Vieth have been most likely murdered, or are perhaps lashed to the next tree, and your life is in their hands: what does it signify whether you lose it a few hours earlier or later? With this resolution I went forward, my pistol however cocked for the first assailant. As soon as I came up with them I asked, "Are you come as friends or as enemies?" I received no answer. My next inquiry was, "Who is your chieftain?" "Smittee (Smith); he is at Praneghierie's (the white man's) tent." I immediately proceeded there, and found my friend Smith, of Corentyn recollection, and the Copename chieftain, whom we met at the post Oreála, with Mr. Cameron, in conversation. All my apprehension melted like snow, and I ascertained now that the Macúsie expedition had in reality only arrived a few hours ago. When approaching the

Berbice, a musket had been fired by accident in our camp, and the Caribs supposing that some of their friends from the Rupununy were awaiting them, had set up a hue-and-cry, which had given Mr. Cameron the first notice of their approach. But what must have been their astonishment, when coming in sight of the river, they observed my corials? When I formerly reasoned with them at Oreála, on the injustice of enslaving Macúsies, and I found that it made no impression, I threatened them with the vengeance of the "Big Governor,"* and that I should be before them at this path which crosses the Berbice to the Essequibo. They smiled at my assertions, and considered it impossible. I had resolved, though alone, to use every means which policy allowed me to prevent them from executing their designs, but the difficulties which I met with while ascending the Berbice made me despair of reaching the path in time: fortunately, however, we accomplished it. In the course of the day we learned, that after Smith had returned from Skeldon, whither he accompanied me to receive payment, every preparation was made for the contemplated trip. Before they set out "Old Thomas" died, a *pi-ai* man of great renown; he had planned this expedition, and was to accompany it. He belonged to my crew when ascending the Corentyn, and when I attempted, whilst in Oreála, to persuade them not to undertake the slaving expedition, I found my intentions always counteracted by his interference and threats. He was greatly emaciated by a pulmonary complaint, at the time he left us in Skeldon: it was natural, therefore, to suppose that not many months would elapse before his death, and I told this to Smith before we parted. It had so happened as any one might have predicted: but upon the superstitious Indians it had great effect: they paused in their designs; long consultations were held, and they relinquished their original plan of the expedition; and having once hesitated and become apprehensive, they were now afraid to go even on a trading expedition without sending a deputation to the Macúsies to prepare the way. They had selected a Macúsie, named Sakurra, who had been brought up from childhood among them, and his two sons, for that purpose. Thus had the delay arisen, and favourable circumstances had assisted me; so that this prediction likewise proved true. Smith took the earliest opportunity, after I had arrived in the camp, to inform me that they had given up all idea of enslaving, and that they were merely going to barter for hammocks, cotton, dogs, &c. I was well aware of this, as soon as I had time to look about, from

* The Indian is well aware of the different degrees of authority which are exercised by the post-holder, protector, fiscal or sheriff, and governor; and he connects with the name of "Big Governor" everything that is great, and commands obedience and respect.

the number of women and children in their party, which consisted of twenty-six men and two lads, six women and six children. If the Caribs undertake a warlike expedition, women and children are left behind. Smith, however, kept the reasons secret which had induced him to this change, and they were only ascertained by degrees at unguarded moments: of course I took the greatest advantage of the ascendency I had got over them by the truth of my prediction, that I should be before them at the path: it was a moment of pride and exultation, when I considered that I had been the means of saving many an innocent Indian from bondage, and from being torn from his family and country as a slave, which could not have been effected without a bloody contest; and the idea that I have been the indirect means of preventing it, recompenses me for my fatigues, and for the anxiety that I suffered, when I saw the difficulties of making any progress towards reaching the high mountain range by this road.

The Caribs were as short of provisions as ourselves: having been extravagant in the commencement, they now suffered from want; nor could we assist them.

According to their information, it was twelve days since they had left Tomatai. They had passed the Corentyn falls by hauling the corials overland to the left, behind the large cataract, called *Marisappa Yuma*, from whence they had reached, by water, the path which leads to the Berbice in two days and a half. Here they had hauled up their corials, to remain until their return, and had accomplished their journey from the Corentyn to the Berbice in two days and a half—an easy march. Most of them were painted with roncou and lana (*Tabuseba* in Caribbee). I observed a boy, who had painted on his limbs representations of some of the figures which we had observed cut in the rock *Timihrie*, and in some of the boulders near the great cataract.

Jan. 31.—We started early for the Essequibo. Much to my regret I had observed, that since we had been encamped the river had fallen ten inches: I determined, therefore, to return with all dispatch, as I was well aware, should it fall twelve inches more, we would have been blocked up until the rainy season should set in in the mountains, in March, while the middle of February was the best time to cross the lower cataracts, partly swollen by the rainy season of the coast regions. Should I find, on my return from the Essequibo, that the Berbice had not fallen materially, I contemplated a visit overland to the Corentyn.

Our line of march presented a strange sight; Indians with baskets, containing articles for barter, and large bundles of bows and arrows, women with children, or the brats astride the husbands' shoulders, some with luggage and provisions, and little girls, anxious to perform their part, each carrying a squalling puppy

in her arms. Thus we trod the path in Indian file. On arriving at the spot where we had left the kairounies, no bush hog was to be seen, but evident marks that it had been carried off by a tiger. On scouring the bush we discovered my Indian dog, Caniantho, stretched out dead, and a triangular wound on each side of the neck, made it probable that it had been killed by the same tiger which carried away the kairounies, and with which he had evidently fought: these were at length discovered: they had been dragged some distance from the place where we had hung them up, and laid side by side to serve for the animal's next night's repast. I regretted the dog very much, as he had shown much attachment to me, and being of the Macúsie breed, with all the marks of that variety, I bought him, with the intention of sending him, on my return, to the Zoological Gardens.

At half-past nine, A.M. we arrived at swampy ground, which I immediately recognized as that which had set bounds to our exploring tour from Primoss last year :* at that time we sunk to our knees in the mud; now it was almost dry. Shortly after we saw the first cocoa trees, and in fifteen minutes the broad Essequibo was before us, and we joyfully hailed the sight of an old acquaintance. We had walked from our camp at the Berbice to Primoss, on the eastern bank of the Essequibo, in 3h. 20m. I still found the hut which we had erected almost twelve months ago, and in which Mr. Brotherson and myself passed a most uncomfortable night, the rain falling in torrents. Mr. Reiss arrived shortly after: he was quite enthusiastic when he saw the fine broad Essequibo for the first time. As soon as the whole party came up, the Caribs made immediate preparations for leaving us, as they had now resolved to proceed to the abandoned settlement, Cumaka, three miles lower down. Mr. Reiss was anxious to see something more of the Essequibo, and was desirous to go with them as far as Cumaka: I considered it therefore best to keep Smith as hostage until his return in the afternoon. I had desired, when I left the camp, that a gun might be fired at six o'clock in the evening: we heard it quite distinctly; the direction was N. 55° E.; the direct distance 9 miles. In consequence of the unfavourable weather I had not brought any of my instruments except the compass. The position of Primoss, as deduced from observations at the mouth of the Rupununy, is in lat. 3° 50′ N. long. 57° 52′ W., while that of our camp on the river Berbice was in 3° 55½′ N., 57° 50¾′ W. The course S. 55 W.; distance 9 miles, gives 5 miles southing, and 7½ miles westing; the difference therefore in latitude is 3-10ths of a mile, whilst in longitude it is 6½ miles, which may arise from the longitude of the Essequibo being deduced by dead reckoning from lunar distances at Annay.†

* See Journal R. G. S., vol. vi. p. 269.

† The difference in longitude is trifling; and when we consider that the former

Feb. 1.—We left the Essequibo rather early, and after a walk of three hours and twenty minutes, entered our camp: as I know from experience that I walk three miles in an hour, the distance and windings of the path included is ten miles. The result of my crossing from the Berbice to the Essequibo will prove of importance to geography: the short period which is required to cross from river to river establishes most undeniably the course of the river Berbice much further to the westward than it is laid down in any of our maps. In Arrowsmith's late map of Columbia (London, 1834), the sources of the river Berbice are laid down in lat. 4° 30′ N. long. 57° 14′ W., whereas by my observations, our camp was thirty-five miles to the southward, and as much to the westward of its assumed sources, and here the river was thirty-three yards wide, with a depth from eight to ten feet, and appeared to continue so as far as it was visited by us.

The next point of consequence is the non-existence of the river Demerara. Where I crossed, with the exception of a dry bed of a streamlet, which has its outlet a little beyond our camp, we did not see any appearance of even a brook between the Berbice and Essequibo. In all maps the sources of the river Demerara are placed in the 4th parallel of latitude, and about thirty miles south of those of the Berbice of the maps; but it is my opinion that it rises in the mountain chain between 4° 30′ and 4° 40′ N. We noticed, during our ascent, a small river fifteen yards wide, which emptied its black waters into the river Berbice in lat. 4° 21′ N., flowing from W. by S.; but of this we saw no trace. I estimate, by careful observation, the river Berbice at twenty feet lower in level in this parallel than the Essequibo. The barometer at our camp showed 333 feet above the sea; the cataracts on the Corentyn are considerably higher.

The soil between the two rivers appears to be particularly calculated for the cultivation of cocoa, and the flourishing condition of the plants we found near Primoss may be cited as proof.

On our return the river had fallen from eight to ten inches in the two days. This fact, added to the shortness of our provisions, —(we were now on five ounces of rice a day)—prevented my crossing to the river Corentyn. From information obtained from Smith, it appears that the ground is similar to that between the Berbice and Essequibo: there is only one small brook to cross,

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position of Primoss was determined by dead reckoning, worked up from lunar distances at Annay to the west, and the latter by meridian distance carried from New Amsterdam, on the east, during two months, and up a series of cataracts, it may be considered as surprisingly accurate: the determination of the relative position of the two rivers Berbice and Essequibo at this point, by walking across the intervening land, is highly important. Mr. Scomburgk's indefatigable zeal in obtaining celestial observations whenever practicable must strike the most cursory reader of his Report, and his candour in honestly stating this slight discrepancy is well worthy of imitation by all travellers.—Ed.

and they had performed the distance in two days and a half; rather slow walking, as there were many children in their train; from which I conclude the distance is not more than twenty-four miles. There are, therefore, no difficulties in connecting the upper Essequibo with the Corentyn; an object which may be of importance to the colony. The navigation of the Corentyn, by flat-bottomed boats, offers less impediments, with the exception of the great cataracts, than the Essequibo.

We learn from M. de Humboldt ('*Relation Historique*') that Colonel Barata went from Para to Surinam with dispatches, in the year 1793:* there is no doubt that he descended the Rupununy, and reached the Corentyn by the path just mentioned. This path exists in the recollection of the oldest Caribs, who remember at the time of their youth, when the Essequibo and Corentyn were thickly inhabited, that a constant communication was kept up between the Caribs of the Pacaraima mountains and those of Surinam while the low swamps of the Berbice were only the abode of beasts of prey and noxious reptiles. We were probably the first who ever ascended the river Berbice, from its mouth to 3° 55′ N. latitude; and the difficulties connected with the undertaking will be remembered as long as our recollection lasts.

Feb. 2.—Commenced our return. As I had expected, we met the greatest difficulties: the water scarcely twelve inches deep.

Feb. 4.—It began to rain heavily, and by the 6th the river was considerably swollen, and we now made rapid progress on our descent.

Feb. 7.—We passed Blackwater river, falling in from the west, just a month after we had seen it for the first time.

Nothing of interest occurred. Even the animal creation seemed to conceal themselves during the tropical torrents. Occasionally a carara (*plotus* Spec.) was seen to follow the river's course, stretching its long neck at the unusual appearance of our corials. It is a drowsy bird, and after its meal it takes its siesta. One that was sleeping on the branch of a tree overhanging the river, suddenly woke by the noise of our paddles, tried to dart into the water, but fell into our corial and was captured. When surprised, the darter does not seek its security in flight, but precipitates itself into the water and dives: the peculiar formation of its nasal organs allows this bird to remain ten minutes under water. The bird is from two feet six inches to three feet long; a sharp-pointed beak, and its neck is so pliable in consequence of an additional joint, that it can contract it like the body of a serpent. It kept our dogs at bay.

Feb. 9.—We arrived at the uppermost of that series of falls,

* See also MS. of Padre Sousa, of Barra, in Journal R. G. S., vol. vi. p. 16.

which, for want of an Indian name, we had called the Christmas Cataracts. The corial we had left was no longer to be seen, and the heads of the kaymans, which we had deposited till our return, had the large teeth broken out: as to these the Caribs, and almost all Indians, ascribe talismanic powers, there could be little doubt that Acouritch and the Caribs had been the thieves in both cases. In consequence of the river having swollen, the rocks, which we found bare on our ascent, were now chiefly covered, and the falls, in consequence of the increased volume of water, more powerful. Nevertheless Cornelius thought he might venture to shoot them; and as I knew that he had great experience in these matters, I did not contradict his opinion. I took, however. the precaution to remove the chronometer and all my instruments, and it was fortunate that I did so, as the heavy surge at the cataract almost filled the corial, and it was with difficulty that she could be floated to the next island. The other corials were brought by a more laborious but safer road to the foot of the first fall. In order to pass the others, I directed the corials to be unloaded, and the baggage to be carried over land, while we were still obliged to hazard our corials. It is an exciting scene to see the corial, when once in the current, shooting along with the swiftness of lightning: she arrives at the edge of the cataract, and balancing for a moment, she plunges headlong into the surge below, dashing the spray on either side against the rocks that bound the passage; then rises, and is carried forward by the increased velocity of the current. The large corial which carried our provisions was thus on the point of shooting the fall, and Mr. Reiss and myself went to the foot of the cataract to watch her progress. The river makes a sudden bend, and the stream descends obliquely; we therefore scarcely saw the corial coming round the point when she was already in the current, and flew towards the fall; the steersman and bowman apparently not acting in concert, she shot towards the rocks, and when we expected that she would strike and be dashed to pieces, the back-water from the rocks drove her off, and she escaped unharmed. The descent of the corial became the subject of a prolonged conversation between Mr. Reiss and myself, and I expressed a wish that my corial, which was by far the most expensive, should not be hazarded, if there was any other method of lowering it.

We were now within five days' journey from the first settlement. While in course of conversation to-day, after our scanty meal, we were rather surprised when Mr. Reiss indulged in a melancholy strain, and observed, "he knew he should die young." We ridiculed the idea. As the sky was more favourable than usual, in the evening I went out, in order to observe the meridian altitude of Canopus, in which I was assisted by Mr. Reiss.

Feb. 12.—Cornelius reported this morning that he had inspected the cataract, and he thought it impossible that the corial could be lowered down by ropes, since the rocks did not afford footing to the Indians. Mr. Reiss, who was standing next to me, thought I was too apprehensive; and he considered there was less danger for my corial, than for the one which descended the preceding morning. The corial was therefore to shoot the cataract, and I saw that the necessary arrangements were made for her descent. I was much surprised when Mr. Reiss expressed his intention to go in the corial, in order to see better how she would go down. I remonstrated with him, as he was not an experienced swimmer; and, being called away by some other business, I thought it was a mere whim, which would be given up on further reflection. I was yet in conversation with Mr. Vieth, when information was brought to me that the corial was just on the point of starting. I proceeded directly to the foot of the cataract: when the corial hove in sight, the first object that struck me was Mr. Reiss, standing on one of the thwarts in the corial, when prudence would have dictated that he should sit down. From that moment to the catastrophe not two seconds elapsed. Intending to avoid the danger of yesterday, they descended at a different point, where the fall was more precipitous. The shock, when her bow struck the surge, caused Mr. Reiss to lose his balance: in falling, he grasped one of the iron staunchions of the awning. The corial was upset, and, in the next moment, her inmates, thirteen in number, were seen struggling with the current, and, unable to stem it, were carried with rapidity towards the next cataract. My eyes were fixed on poor Reiss: he kept himself above water but a short time, sunk, and re-appeared; and, when I had hopes that he might reach one of the rocks, the current of the next rapid seized him, and I fear he came in contact with a sunken rock: he was turned completely round, and sunk in the whirlpool at the foot of the rapid. His cap was taken up by the first Indian (old Mathias) who was able to stem the current, and attempted to swim to his assistance: he mistook the cap for poor Reiss. Immediately that I was able to muster men enough to guide a corial, we commenced a most diligent search, in which we were assisted by some who had, meanwhile, manned a second corial. For the two next hours all our endeavours were fruitless. At length we found his body in a direction where we least expected it, and where an under current must have drifted it. Life was extinct; nevertheless, the usual means for recovering drowned persons were resorted to, but in vain.

It now became my painful duty to make arrangements for depositing the remains of our poor companion in their last home. During the evening I selected for that purpose a sequestered spot,

opposite to the place where he was drowned, on a rising ground which the water, even when at its highest, during inundations, does not reach. Two aged trees here stand on the western bank of the river, whence I desired a path to be cleared for his future resting-place.

Feb. 13.—This morning we carried our poor friend to his grave. In the absence of a coffin, we wrapped him in his hammock as a shroud; and after he had been put into the corial, by the upsetting of which he lost his life, we conveyed him to the opposite shore, and from thence he was carried, by the young men who professed Christianity, to the level spot on the hill which we had prepared for his resting-place; and while I read the expressive and beautiful service for the burial of the dead, there was not an eye dry of those who call themselves Christians; and even the Indians, decently apparelled, stood with downcast eyes round his grave, and over many a rude cheek stole a tear. On a level ground, round which mora-trees and palms,—the latter an emblem of the Christian faith,—form an almost perfect circle, there now rises a pile of stones, under which rests our lamented companion to await his Maker's call. A small tablet which he himself brought, in order to engrave his name, and to leave it as a remembrance in case we should reach the Acaray mountains, now bears this inscription:—

Drowned,
12th Feb., 1837,
Charles F. Reiss,
Aged 22 years.

and is firmly fixed to one of the trees that form the circle.

Feb. 15.—With what feelings we left our camp and continued our journey this morning may be imagined. The falls and rapids we had to pass were very numerous: I think there are forty-eight to the Christmas Cataracts; and it was a sore trial to our crew, in their present enfeebled and dejected state, with the remembrance of our recent accident and loss. We did not pass some of the larger cataracts without getting the corials filled with water, and we had twice to unload in order to bale. We halted at noon, at the foot of the hills, in 4° 46½′ N., which apparently are the highest adjacent to the Berbice; and I made a series of hourly observations on the barometer, as data for computing the height of the hills and of the river; that of the latter proved to be 160 feet above the level of the sea.

Feb. 16.—Accompanied by some Indians, I left this morning early, to ascend the hills in the south-west. Our path led for some time along the river upwards, until it turned northerly over

undulating ground. I never saw so great a variety of ferns assembled in such a small area as I found here, amounting to upwards of fifteen species, some very interesting. We repeatedly crossed a mountain-stream, which meandered through the gradually-rising ground, forming miniature glens. Half an hour's walk brought us to the foot of the eastern hill, which assumes the form of a cone. In ascending we found many large fragments of rock, containing pieces of rounded quartz, until the peak rises abruptly. We scrambled with difficulty to the summit. The sky was clouded, and a thick fog hovered over the wooded valley; the view was, besides, obstructed by gigantic trees; and though I had mounted one of the boulders, I could not succeed in getting any extensive view. The barometer gave the height of this peak 828 feet above the level of the sea. A higher peak bore from hence N. 25° W.: in order to reach it, we continued along the ridge for about a mile and a half, when we stood on the highest point of the mountains. A chance gleam of the sun occasionally made its way through the thick coat of clouds, and a strong easterly wind dispersed the fog. This peak formed the north-western angle of the valley, and afforded me a fine view over extensive wood-land towards the south-east. The next highest peak bore north, about one mile distant, and was the hill I measured while at the Cataract Itabrú. The valleys run in the direction of the range of hills, whose sides are generally covered with lofty trees, and their heights formed by broken pieces of rocks, or perpendicular walls. Many of the rocks appeared of marl, and I was much surprised to find the ridge, as well as the sides of the hills, covered with angular and rounded quartz—pebbles similar to those which I had seen previously at the savannahs of the Pacaraima, at the Carib path, at the Christmas Cataract, and now on the top of the highest hill of the River Berbice, as far as I have visited it. The boulders which we found in such large quantities on the sides of the south-eastern peak contained fragments of quartz, sometimes several inches in diameter, which showed traces of transportation or of long-continued friction.

I remained above two hours on this spot. The barometer showed that this peak, which, as before mentioned, I called Parish's Peak, was 910 feet above the level of the sea, and 775 feet above the River Berbice, which meanders at its foot. After having engraved on the bark of a tree "Parish's Peak," as a memento of my excursion, I retraced my steps, and pondering whether it was probable that this peak had been visited before by a human being, I missed my way, and had some difficulty in rejoining the party at the foot of the hill. Mr. Veith, the same evening, who had wandered in search of plants, could not find his way back till we, alarmed for his safety, fired guns every

quarter of an hour, which directed him to the camp about nine o'clock.

The fitness of this hilly tract for the cultivation of coffee, and, from its gravelly and clayey nature, for the cultivation of the vine and olive, is remarkable. The springy soil in the valleys would produce almost anything, but the sides of the hills are particularly adapted for the production of grapes without much labour or expense. What an area might here be claimed from nature, and made subservient to the wants of man!

This range of hills, which is connected with the Twasinkie and Pacaraima mountains, I am disposed to consider as the old boundary of the Atlantic; the geological features might lead to such a supposition. A little farther north commence the hillocks of sand, which may be presumed as the consequence of a receding sea.

In lowering one of the corials down the gulf, the rope snapped, and the boat was split against the rocks; we were therefore, with great labour, obliged to transport the other over the hill.

Feb. 17.—We arrived, in the afternoon, at the Cataract Itabrú.

Feb. 19.—All our arrangements were completed by twelve o'clock to-day, and we left the last cataract where danger might be apprehended under great demonstrations of joy from our Indians, who appeared to have received additional strength in their sinews to propel the corials.

Feb. 20.—We arrived this morning at the Waccaway settlement, the first human abode we had seen since we left it, two months since, accompanied by the Chieftain Andres and his men, who, it may be recollected, deserted us while ascending the Christmas Cataracts. As might be expected, none of those who deserted us were found at the settlement, which may be considered a half-way house between the colony and the falls. There are always strange Indians to be met here; the vicinity of the upper path from the Berbice to the Demerara makes it convenient as a resting-place. On the present occasion we found Waccaways and Macúsies, who had been working for some months for one of the wood-cutters: as fruits of their labours, each had a gun and some pieces of calico, which were ostentatiously exhibited; and they appeared not to have the slightest mistrust of us, as they left the hut several times without concealing their property, though our whole crew were strangers to them.

On rounding a point of the river, in the vicinity of a newly-settled piece of ground, I saw some woodskins, with Indians, approaching; but scarcely had they observed my corial, when they paddled with all their might to the shore, and jumped out, leaving the woodskins and their cargo to their fate. I conjectured that they were some of the runnaway Waccaways. One

of the woodskins, with two women, paddled towards the settlement; the younger one, after having landed, ran with the swiftness of a gazelle towards the woods. We recognized Andres' wife. He himself must have been in the woodskin: we saw his gun and shot-belt in it. Since I had not succeeded in apprehending him, I did not feel any desire to hunt after the others, or to frighten the women: we therefore continued our journey.

Feb. 21.—At noon we arrived at Moracco, at Mr. M'Cullum's, where we were received with the same hospitality we had experienced during our ascent of the river. Everything needful was provided, and my poor Indians, after six weeks' scarcity and deprivation, were once more allowed to indulge in the luxury of an urestricted meal.

Many of them were very much swollen, while others, and we among them, were so attenuated, that our acquaintances broke out in a cry of surprise; yet, though we had suffered much, all might have been forgotten had we not had to bewail the untimely death of Mr. Reiss.

On our return to Wickie I found that the weather was more favourable in the coast regions than the advanced season would have led me to expect. I resolved therefore to undertake a tour to the river Demerara, partly by means of the *Wieronie*, a tributary of the Berbice, and partly by land over the savannahs.

Feb. 27.—We started from Wickie and descended the river as far as Peereboom, the residence of Mr. Duggin, who showed us every attention and civility. This gentleman has a wood-cutting establishment on the Wieronie, and as I proposed to ascend the river as far as I could, to judge of its fitness for navigation by punts and other river craft, I thankfully accepted his offer of a letter to his superintendent, to give me Moses, an Arawaak chief, as a guide across the savannahs, should I find the navigation too intricate to proceed.

Feb. 28.—We arrived at the mouth of the Wieronie, which joins the Berbice from the north-west, at a point where the river, flowing to the north, takes an abrupt turn to the south-east, and expands considerably. The waters of the Wieronie are very black, but perfectly clear; its width is about fifty yards, its depth twenty-seven feet. At its eastern angle of junction there was formerly a redoubt and a reformed church, of which the remains are to be seen. The minister's house was on the river's opposite side. We found the current very strong, and, as the river is influenced by the tides, the ebb obliged us to come-to. There were formerly several plantations along the banks of the river, and we observed the remnants of a wharf, trenches, &c.; and the soil appeared to be very fertile. The river meanders, and keeps

an average depth of eighteen feet. The savannahs frequently approach the river; at other times its banks are margined with trees and bush. From a small hillock on the right I had an extensive view over the savannahs, which stretch to the rivers *Maiconie* and *Mahaica*, and a lively intercourse is carried on between the Indians of these rivers across the savannahs.

March 1.—The scenery of the river became very interesting: it expanded occasionally like the Upper Berbice, but its lake-like expansions were generally encompassed by higher land, and studded with little islands, on which were numbers of the majestic eta tree. Its lofty stem supports numerous fan-shaped leaves, and a gigantic cluster of almost round seeds about two inches and a half in diameter, and marked like the cone of a pine.

A path leads from one of these inlets, called *Catacabura*, across the savannahs to the river Demerara, but as I had no guide I preferred to proceed to Yucabura, 9 miles farther north, in order to obtain the promised guide. The river becomes shallow wherever it expands; and though it is scarcely in such places more than from four to five feet deep, punts loaded with wood navigate it freely. I found that it would be advisable to leave the corial here, and to proceed on foot over the savannahs.

March 2.—With Moses as guide, we commenced our pedestrian excursion. He was accompanied by his wife, a young Arawaak, not half his age, whom he burdened with his share of the baggage. We followed, for about three miles, the river's course from the south-west, through woods which border its banks. The rich vegetable soil was here several feet in depth, and elastic to the step. On issuing from the wood we entered a tract of bushes about twelve feet in height, which, to one unacquainted with the vegetation of these tracts, would cause surprise at its luxuriance in a loose sandy soil, as white and sterile apparently as the sand of the sea-shore. The fact is, that in digging it will be found that the sand is mixed at a certain depth with rich mould. Nevertheless the Flora is quite peculiar, and the flowers of these bushes distinguished by their fragrance. The Arawaak Indian names these spots of undergrowth *Moro*. They are the transition from the wood to the naked savannah, which we entered shortly after. I was here agreeably surprised to see the savannah alternate with woodland and hillocks; the prospect was therefore by no means so monotonous as in the savannahs of the Pacaraima mountains. Passed a small brook, called the Catchie-cabura, which meanders as a sprightly streamlet in a north-west direction through the wood towards the Wieronie. After we had refreshed ourselves we continued our journey, exchanging the hot savannah for the shady forest. The eye was never wearied by monotony; occasionally it swept over the plain

to the dense forest which bounded the prospect to the west, or it was arrested by a ridge of coppice wood, over which towered the eta, with its fan-shaped head, and marked the track of a rivulet. On our right the course of the Wieronie was distinctly indicated by the number of eta trees. At four o'clock in the afternoon it was not more than a mile from us, and I profited by the opportunity to ascertain its course by compass bearings. On the edge of a wood we passed some huts abandoned, as we were told, on account of the murder of an Indian in a quarrel.

After a march of twenty-four miles we halted for the night at some huts tenantless except by chigoes, which swarmed. A meridian altitude of Canopus gave me 5° 40′ 30″ N. as our latitude.

March 3.—At an early hour we crossed the brook *Aroma,* which flowed to the W.N.W., through a narrow glen about forty feet deep, apparently effected by the gradual action of the stream. This was also characteristic of all the running waters we passed here. On emerging from a wood we saw some Indian huts before us—they were abandoned; our guide recollected however the former provision fields, and off started the whole train to cut sugar canes. After nearly an hour's delay they returned almost loaded with canes and pine apples. Our march continued across savannahs and through woods. At ten we arrived at the brook *Yawarie,* with light brown water. It here flows north and joins the Wieronie about half a mile from the place where we crossed the former. We ascended a hill of about sixty feet in height, and continued our march along its brow for two miles, in a south-west direction; at its western base flows the Wieronie. On descending we had to wade through a swamp before we reached that river, which here was almost darker than at its mouth, but scarcely more than eight yards wide and nine feet deep, with a strong current. Arrived at the opposite bank, we had again to wade through a swamp: we often sunk up to our waist in the mud, and were really rejoiced when we reached rising ground. We stopped at five P.M., fatigued by our march, and drenched by torrents of rain, at the edge of a wood, where were some temporary huts a few steps from the brook *Elissa,* also flowing to the northward.

March 4.—We resumed our course through the woods: it was now mostly west; the stream *Wannoka,* with black waters, was almost as large as the Wieronie, where we crossed it. The soil chiefly fertile woodland; the trees consisted of tedermas, wamara, kakerally, manaribally, kakerabally, pourouch, or bullet-tree, &c. &c. The weather was not more favourable than the preceding day, and several swamps which we had to cross by no means assisted to make our journey agreeable. It is difficult walking through one of these swamps; they are generally overgrown with

the manicole palm, and as soon as some substantial soil has collected around their base that graceful tree appears to rise from a hillock. If the traveller succeed in stepping from one of these hillocks to the next he is sure to sink not much above his ancles in the black mud; but, should he miss his mark, he may prepare himself to sink to his waist in the boggy ground, whence he rises, not as a swan, unless it be like that once *rara avis*, the black swan. We passed several brooks flowing to the north, very likely tributaries to the *Maiconie* and *Mahaica*, on the sea coast. At one o'clock, having previously followed the ridge of a hillock about fifty feet high, we descended and crossed the *Alissaro*, a brook with white water, and the first which flows in a southern direction, or contrary to those we had previously passed. We again ascended a steep hillock, higher than any we had hitherto seen (perhaps eighty feet), then crossed two streamlets, also flowing to the southward, and came upon the vestiges of a former timber path.*

An hour afterwards we passed some new fields, planted with cassada, pumpkins, and other necessaries for the sustenance of the Indian. The path descended from here gradually, but I should say that these fields were upwards of 200 feet above the Demerara river. On issuing from the wood we were at an abandoned settlement, and in sight of the river Demerara, which we hailed with delight. It is here dark coloured, and very different in appearance from the muddy river it presents at George Town. We reached its banks at a place called Ajackwa, and then followed its course northward for about a mile and a half, and arrived at 3. 45, at the Post Seba, where Mr. Spencer, the post-holder, gave us a most hearty welcome.

We crossed the Wieronie in lat. 5° 39½′ and long. 58° 3′ W., from whence it appeared to take a far southern direction; the direct distance from that point to the river Demerara is therefore about 21½ miles; † and there is no doubt in my mind that the

* Wooden rollers, laid down at certain distances, to facilitate the transport of timber to the river.

† The direct distance between the rivers Berbice and Demerara, that is from the junction of the Wieronie and Berbice to the Post Seba on the Demerara, almost in the same parallel of latitude, is about fifty-two miles, viz.—thirty to the point where the Indian path crosses the Wieronie, and twenty-two thence to the Demerara. The former part may be likened to the string of a bow, or the chord of an arc of sixty miles, described by the river Wieronie meandering to the northward through the savannahs; and to judge from its numerous sweeps, inlets, and occasional swamps, the rise of the ground between these two rivers can be very trifling. The cause of its rapid current must be looked for nearer its source in the south. From the Wieronie to the westward the ground appears to rise till within about seven miles of the river Demerara, where, judging from the opposite course, (north and south) of the streamlets (whose outlets we do not know, unless they reach the coast), it may be presumed is the watershed or line of separation of waters flowing to the Demerara and the Berbice. It is possible that this line may be only a few miles to the westward of the spot where the Wieronie was crossed, but it is not easy to discover. Yet this is not the highest ground between the two rivers, which appears to reach 200 feet at the distance

Wieronie is ample enough to be rendered navigable for canoes and punts to the point where we crossed it: the trees which have fallen across it need only to be removed to make it already navigable for corials and light canoes. The whole distance which we had walked, according to the circuitous road which we had been led from the brook Yucabura, amounted to fifty miles. The savannahs which we had traversed are plentifully watered by beautiful streams, tributaries to the Wieronie and Berbice, and abound in wholesome and nutritious grasses. They are therefore particularly qualified for the grazing ground of many thousand heads of cattle and horses. The favourable circumstance that these savannahs are so well watered and interspersed by woodland, to afford shade, enhances their value, and if an experiment is required whether the grass be wholesome, we need only to refer to Mr. Duggin, who has lately begun to raise cattle, and is highly satisfied with the results.

It was my intention, when circumstances would permit it, to pay a visit to the great fall of the river Demerara. I had heard much of it, and was anxious to make a comparison with those I had passed in the Essequibo, Corentyn, and Berbice. The weather was unfavourable, but this did not prevent me executing my design. Through the kindness of Mr. Hebberd, I was provided with a batteau, or built canoe, and I left the morning after my arrival at Seba. I was fortunate enough to procure the great Arawaak chief Simon, as a guide, and he performed most faithfully and attentively his duty. A relation of this excursion is beyond the limits of this report; suffice it to say, we arrived on the 7th of March at the great fall, and I lost no time visiting it next morning. I was disappointed; it has neither the grandeur nor the volume of water of William the Fourth's Cataract on the Essequibo, and can by no means measure itself with Smyth's Cataract in the Corentyn. With regard to the difficulties which it might have opposed to me, in case I wished to pass it with my corials, I can certify that I should not have hesitated a moment to transport baggage and corials over, and with less trouble, than at the Cataract Itabrú. At the great fall (as it is called, *par excellence*) of the Demerara, the road has been cleared and the neces-

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of only a mile and a half from the eastern bank of the Demerara. Thus the Berbice forms the natural drain of a country extending thirty-five or perhaps forty-five miles to the westward, and upwards of thirty miles (by the Wickie) to the eastward, or nearly to the banks of the great river Corentyn and to the Demerara, neither of which, during this part of its course, receives a tributary of any importance. What a noble tract of fertile country do these savannahs offer to the colonist; land rich in all the luxuriance of a virgin soil and a tropical sun, and offering every facility of communication that can be desired! It may be noticed that the shortest distance hereabouts between the Demerara and Berbice would be an E.S.E. line from the Post Seba to the western bend of the Berbice, below the junction of the river Wickie, about forty-seven miles, and this line continued for forty-seven miles further would cut the river Corentyn close to the post of Oreála.—Ed.

sary rollers are laid by Indians, who have transported their corials and woodskins over; while in every instance where such a transport became necessary in the river Berbice we had to make the preparations ourselves; and with regard to our difficulties at the Christmas Cataracts, they far, far out-balanced those which the great fall could have opposed to us.

Among the Indians of the upper river Demerara the greatest scarcity was prevailing: in consequence of severe rains the cassada roots rotted in the ground, and, in order to secure themselves against starvation, they had to resort to the seeds of the greenheart tree, which contains a substance as bitter as quinine. The seeds were grated and put in fresh water, and a matter precipitates similar in appearance to starch: it is repeatedly washed to lessen its bitterness, which it never loses entirely: it is then mixed with rotten wood pounded previously and sifted, and those who have it in their power, mix a little cassada flour to it. This substitute for bread is not only quite black but as bitter as wormwood, and cannot be wholesome.

We returned now to Seba, which we left on the 7th of March, after having rested a day. We retraced our steps towards the Wieronie; but after we had crossed that river we took a different path, to pay our promised visit to the Indian settlement, and to buy cassada bread. The settlement was larger than the generality of the Arawaak villages I had seen along the river Berbice. It might consist of about sixty people in ten huts. After the Indians in my train had taken place, the chief of the settlement came forward and said three short sentences to him whom he considered the first among my crew. Those sentences expressed, in an increased ratio, his welcome, and are, literally translated, "Sit down, sit well down, sit very well down." The man thus addressed, said to each sentence, "*wang;*" "I thank you." He went then to the next guest, and so in rotation, until all had received his welcome. Then came his sons and all the men of the settlement, one by one, and repeated the same. The whole ceremony lasted upwards of half an hour: I was excluded from the welcome. As soon as we had procured the supply of bread we left the settlement, accompanied by two young men which I had hired to carry it to the banks of the Wieronie. We slept that night in an open savannah, drenched by the rain, and arrived in a similar state next day (March 13) at Yucabura, where we had left our corials: tedious as our ascent of the Wieronie had been, the current now bore us along at a rapid rate, and we made in seven hours thirty-four miles. On our ascent we had found the current to run from four to five knots. We landed on the 15th at Wickie, where we found those whom we had left behind in perfect health and all recovered from their late fatigues and deprivations.

One other pedestrian excursion offered itself; I was anxious to

visit the Corentyn by means of the Wickie and Canje; and as many of my Indians, from Oreála and its neighbourhood, had their wives and children with them, which it would have proved inconvenient to take to New Amsterdam, I resolved to accompany the supernumeraries to their home: this would at the same time enable them to send corials on their arrival for their husbands, to the mouth of the Corentyn, to await their return. We entered, therefore, the river Wickie on the 20th, where it is about forty yards wide and twelve feet deep, and continued upwards in a S.E. direction: its waters are whitish and turbulent; in other respects it resembles much the Wieronie, as well with regard to scenery as in soil. Numerous orchideous plants were seen attached to the branches of trees, which overhung the river; and the curious *Coryanthus,* the yellow *Oncidium Gongora,* and others, were in blossom, and distributed a delightful fragrance. One was remarkable, in consequence of its growing on the lofty stem of the eta palms, and its narrow pendulous leaves were from six to seven feet long.

We arrived at half-past four in the afternoon at the brook Pototo, which joins from the N.E., and whose course we followed, as we understood that a short distance from its embouchure some Arawaaks were living. The Pototo resembles an Itabú (the Arawaak term for the lake-like expansions of their rivers). It spreads about 400 to 500 yards, and is partly covered with rushes and other water plants.

We ascended the river for about twenty minutes, when we halted at the landing-place of the Arawaak settlement on the eastern bank, and shortly after received a visit from some of the men: they were very friendly, and informed us that the nearest path led from their settlement to the Canje and Corentyn: there was another higher up, but it was not more frequented, as the Indians who lived there formerly had removed. I resolved, therefore, to engage one as guide to accompany us next morning.

March 21.—I was astonished to see with what burdens the women, who were now returning to their home, had loaded themselves. They had carried on a lively barter with such articles as they had received from me in part of their payment, and calculated on a second, profit on those which they had procured in return. The savannahs which we traversed resembled those between the Wieronie and Demerara. They appeared to be more wooded, and possessed more slopes. After crossing the stream *Turi-cabura,* we ascended a hillock about eighty feet high, whence was a beautiful view. We crossed a brook with a rapid current and black water, and on emerging from the wood found ourselves on the border of an extensive swamp, on the other side of which we observed several Indian huts. It was provoking to find that we must cross the swamp, rendered so much the more difficult, owing to the rushes and grasses having been lately burnt to

the ground. Here were only four huts: we bought half an *Apuje*, or lesser Peccary, which the owner had just shot.

March 22.—Continued our route. An hour's walk through the dense wood, abounding in useful timber trees, chiefly bullet-wood and wallaba, brought us to the small settlement of Arawaaks on the bank of the river Canje; it had been only lately established. We found the chief occupied in making baskets from the slender branches of a species of Bignonia: when he rose he presented a frightful picture from dropsy. He, however, offered his services to accompany us to the Corentyn, as he was well acquainted with the track. Unfortunately my plan of accompanying the Indians thither was frustrated by a severe attack of rheumatism.

The Canje is here about thirty-five yards wide, the water dark-coloured, and its current rapid, perhaps about three miles and a half an hour. The party of Indians embarked next morning in three small corials. Their voyage to the mouth of the brook *Ikuruwa*, where the post-holder of the Canje has his residence, is accomplished in one day: they follow the course of the Ikuruwa upwards to the Brae, or broad water, a small lake through which the Ikuruwa flows, and from thence the path leads over savannahs to Oreála, the distance being about twelve miles.*

With great exertions I returned to the settlement of Pototo next day, and the following day to Wickie, which we ultimately left on March 25. It was Easter-eve, and on our arrival we found Mr. Duggin's house filled with Indians, who, dressed in their best attire, amused themselves in dancing. What a display of beads of all sizes and colours! The men had all new *Camisaros*, or *Hiatos*, fringed with different coloured cotton hangings; and divers figures cut out of white linen, intended to represent tigers, &c., were fixed to the caps. Their chief, Jandje, was one of the mixed race, who formerly possessed the greatest influence over the Indians in his neighbourhood; he could at a short notice assemble from 200 to 300 armed Indians, and his will was undisputed law. He used to drill his Indians regularly: he himself, on occasions where a display was to take place, appeared, dressed out in a costly uniform, with sword in hand; a present, I understood, from the late Governor Baird. His power was arbitrary, and he alone settled every dispute on the spot: the culprit was generally tied to a tree and soundly flogged. However, he protected the Indians against the imposition of the settlers who employed them, and thus preserved his sway. He himself worked very hard, but naturally for high wages, which were gladly given to him, in order to secure his influence in procuring Indian labourers. Since the

* The direct distance from Wickie, on the Berbice, to this point of the Canje, is about twenty-two miles. The Canje hence pursues its course to the northward, and falls into the Berbice immediately to the north of New Amsterdam.—Ed.

colony has stopped the presents, which were formerly given to the Indians, he has retired, and contents himself with superintending the affairs of his own relations, and those who are under him, at his settlement, which, for neatness and comfort, surpasses any I have ever seen before, and vies with that of many of the settlers. In his own settlement he acts as supreme; nothing must be done without his knowledge and consent. He is noted for his gallantry, and indulges in polygamy like the rest of his tribe. He has lately taken unto himself a young bride, distinguished for her Indian charms, and who on the present occasion was dressed as a European: she was certainly handsome; the chief kept a strict watch over her. His feats of valour and villainy, when intent on re-stocking his harem, are the topics of conversation for the country.

March 28.—We bade adieu to Mr. Duggin; and having selected a guide among Jandje's subjects, to inform me of the names of streams and waters in our descent of the Berbice from the Wieronie to the coast, we set out, our progress being regulated by the tides. I was anxious to procure as accurate a survey of the lower river Berbice as circumstances and time would permit me. I used with great advantage the well-known method of surveying by measuring distances by sound, which, by comparison, I found sufficiently accurate, and I have thus procured a number of data which, checked by astronomical observations, may prove useful for the construction of a topographical map of the river on a large scale.

On our descent we visited the site of the old Fort Nassau and Old Amsterdam, the former capital of Berbice: the streets of the latter are yet to be traced by brick pavements: there is little to be seen of the fortifications, which are covered with bush and grass, and we did not feel very anxious to enter into a close investigation, as we had been warned to beware of *Labari*, and other poisonous snakes, which frequent the old walls. As a monument of its former wealth, a single dwelling of a rich proprietor rises alone out of the present surrounding wilderness—ere long itself to be numbered among the ruins around. The glazed and richly-ornamented windows are shattered in, and the name of *Buse*, which in ornamental letters and flourishes decorates the entrance, will doubtless soon be obliterated.

March 30.—At the plantation *Mara*, on the river's right, or eastern bank, I measured a base-line to determine the width, and found it 836 yards wide at about twenty-three miles from the sea; its average depth from three to four fathoms; the current four knots an hour. We reached the plantation Rossfield, on the left bank, that night, and were most hospitably received by Mr. Mackenzie: it is in lat. 6° 10′ N. long. 57° 26½′ W.

March 31.—After an absence of four months and several days, we arrived this afternoon at New Amsterdam. The crowd of

feelings which oppressed my heart at my return were very different from those with which I set out. On reviewing the events which had occurred since the bow of my corial was turned in the contrary direction—not to mention the rainy weather, want of provisions, and the physical obstacles that opposed our further progress—I could not but feel that we were returning without one of our companions; and however conscious that on all occasions I had fully done my duty, and exerted myself to the utmost, still the remembrance of the loss of one who had shared all our perils and privations could not but throw a damp over the gratification that we naturally felt on returning from the solitudes of savage life to the abode of civilized man.

Among other collections in natural history made during these two expeditions into the interior, 58 specimens of birds found on the banks of the Corentyn have been sent to the British Museum; 400 other specimens, collected on the Berbice, have unfortunately been lost on board a vessel during the late hurricane in the West Indies.

Also a collection of about 8000 dried specimens of plants, consisting of nearly 400 species, among which are several kinds of *Lacis*, the rare genus *Cleistes* of Richard, the *Mora* and Greenheart trees, of which so little has hitherto been known, a species of that singular genu *Balanophora*, and many other curious plants.

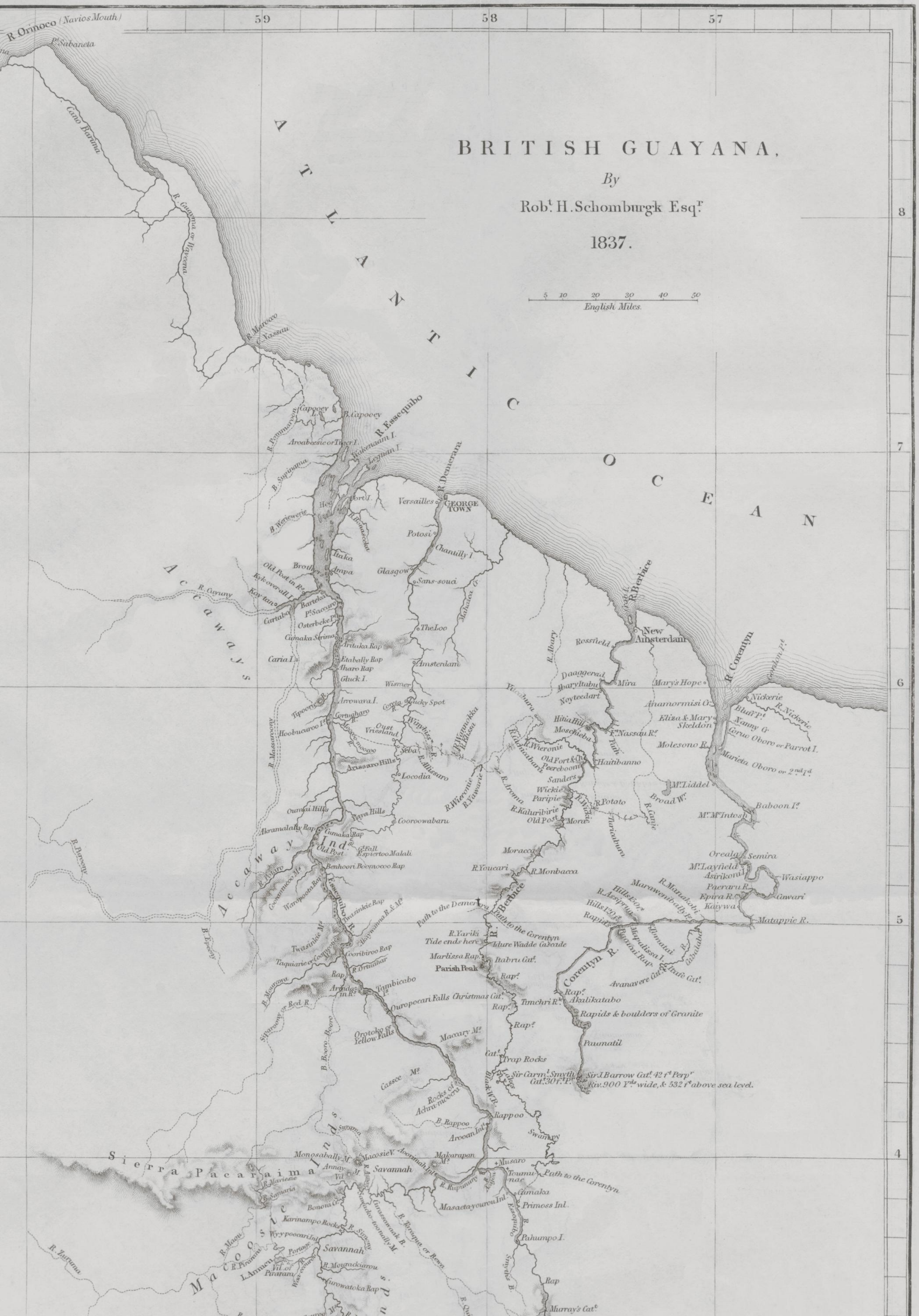
But the most striking object discovered in the vegetable kingdom is a gigantic water lily, with leaves six feet, and fragrant flowers fifteen inches, in diameter, which, at the wish of Mr. Schomburgk, and with Her Majesty's gracious permission, has been dedicated to our Sovereign under the name of

VICTORIA REGIA.

It is supposed to be the same as the plant called *Euryale Amazonica* by Pöppig, who met with it on the river Amazons; but it is a distinct genus in the opinion of Professor Lindley, who has printed for private distribution a short account of it, now in the library of the Geographical Society.

[By the latest accounts from Mr. Schomburgk, dated Demerara, Sept. 12, 1837, we learn that he had happily recovered from a severe attack of fever, and was again to start on the following day for William IV.'s Cataract on the Essequibo, in 3° 14′ N. lat., with the intention of exploring that river to its sources, and then to continue the examination of the range of mountains called the Sierra Acaray, believed to be the line of separation, in this part of South America, between the basins of the Essequibo and the Amazons.


BRITISH GUAYANA,
By
Robt. H. Schomburgk Esqr.
1837.
5 10 20 30 40 50
English Miles.
59
58
57
8
7
6
5
4
ATLANTIC OCEAN
R. Orinoco (Navios Mouth)
Pt. Barima
Pt. Sabaneta
Cano Barima
R. Guayma or Wayeena
R. Marocco
C. Nassau
Capoocy L.
R. Capoocy
R. Pomeroon
Aroabessie or Tiger I.
R. Essequibo
Wakenaam I.
Leguan I.
R. Suprinama
R. Demerara
Versailles
GEORGE TOWN
Potosi
Chantilly I.
Glasgow
Sans-souci
R. Weriewerie
Itaka
Ampa
Old Post in Rs.
Kyk-overall I.
R. Cayuny
Kaytan
Cartabo
Bartekai
Pt. Sacouro
Osterbeke Pt.
Cumaka Serima
The Loo
Mahaica Cr.
Accawavs
Aritaka Rap
Etabally Rap
Aharo Rap
Gluck I.
Caria Is.
Amsterdam
Wismar
Arrowara I.
Tipooria
Hoobucuroo Is.
Lucky Spot
Oust Vriesland
Seba
R. Massarooni
Arissaro Hills
Locodia
R. Berbice
New Amsterdam
Rossfield
R. Abary
Daaggerad
Mira
Mary's Hope
Noyteedart
Moschieba
Ft. Nassau Rs.
Haitibanno
Old Fort
Sanders
Wickie
Paripie
R. Potato
R. Wieronie
R. Yawarie
R. Aroma
R. Kaluribirie
Old Post
Mora
R. Corentyn
Nickerie
R. Nickerie
Eliza & Mary
Skeldon
Molesono R.
Mt. Liddel
Broad Wr.
Baboon Is.
Mr. McIntosh
Oumai Hills
Yaya Hills
Cooroowabaru
Akramalally Rap
Cumaka Rap
Accaway Ind.
Old Post
Benhoori
Boomocoo Rap
Moracca
R. Youcari
R. Monbacca
Orealo
Semira
Mr. Layfield
Asirikonu
Paeraru R.
Epira R.
Kaiywa
Wasiappo
Cawari
Matappie R.
R. Parrony
Waropoota Rap
Twasinkie Rap
Path to the Demerary
Path to the Corentyn
R. Yariki
Tide ends here
Marlissa Rap.
Itabru Cat.
Parish Peak
R. Epecy
Twasinkie Mn.
Taquiarie or Coomyng
Cooribiroo Rap
Corentyn R.
Avanavere Cat.
Rapids & boulders of Granite
Akalikatabo
Tumchri R.
Ouropocari Falls
Christmas Cat.
Tambicabo
R. Murrowa
Siparoony or Red R.
Orotoko or Yellow Falls
Maccary Mn.
Paumatil
Trap Rocks
Sir Carml. Smyth Cat. 30 ft. Pr.
Sir J. Barrow Cat. 42 ft. Perpr.
Riv. 900 Yds. wide, & 532 ft. above sea level.
R. Boora Boora
Cassce Mn.
Rocks of Achra-mocoru
Rappoo
B. Rappoo
Aroaan Inl.
Swampy
Sierra Pacaraima
Monosabally Mn.
Macosie V.
Annay
Savannah
Makarapan Mn.
Musaro
Toumu nae
Path to the Corentyn
R. Rupununy
Masaetayourou Inl.
Cumaka
Primoss Inl.
R. Maviaue
R. Samaria
Bonoui Cr.
Karinampo Rocks
R. Sawong
Wyypoocari Inl.
Portage
Savannah
L. Amucu
Vil. of Pirarara
R. Mourackiarou
Curowatoka Rap
R. Maou
R. Pirara
R. Zuruma
Macoosis Inds.
Pahumpo I.
Smyths R.
Rap
Murray's Cat.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C. Nassau
R. Pommeroon
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B. Capoey
R. Essequibo
Aroabesic or Tiger I.
Wakenaam I.
Leguan I.
R. Demerara
B. Suprinama
B. Weriewerie
Hog I.
Fort I.
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Potosi
Chantilly I.
Brothers
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Glasgow
Sans-souci
Accaways
R. Cuyuny
Old Post in Rs.
Kyk-over-all I.
Kaytan
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Bartelaar
Pt. Saccuro
Osterbeke Pt.
Gumaka Strims
The Loo
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Etabally Rap
Iharo Rap
Gluck I.
Amsterdam
Wismer
Lucky Spot
Arrowara I.
Tipoora R.
Hoobucuroo Pt.
Oust Vriesland
Seba
Arissaro Hills
Locodia
R. Massaroony
Oumai Hills
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Benhoori Boomocoo Rap
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Twasinkie Mt.
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Molesono R.
Marieta Oboro or 2nd Ft.
Baboon Ft.
Mr. McIntosh
Oreala
Semira
Mr. Layfield
Asirikoni I.
Wasiappo
Pacraru R.
Epira R.
Gawari
Kaiywa
Matappie R.
Marawenibally R.
Hills 150 ft.
Hills 120 ft.
Rapids
Corentyn R.
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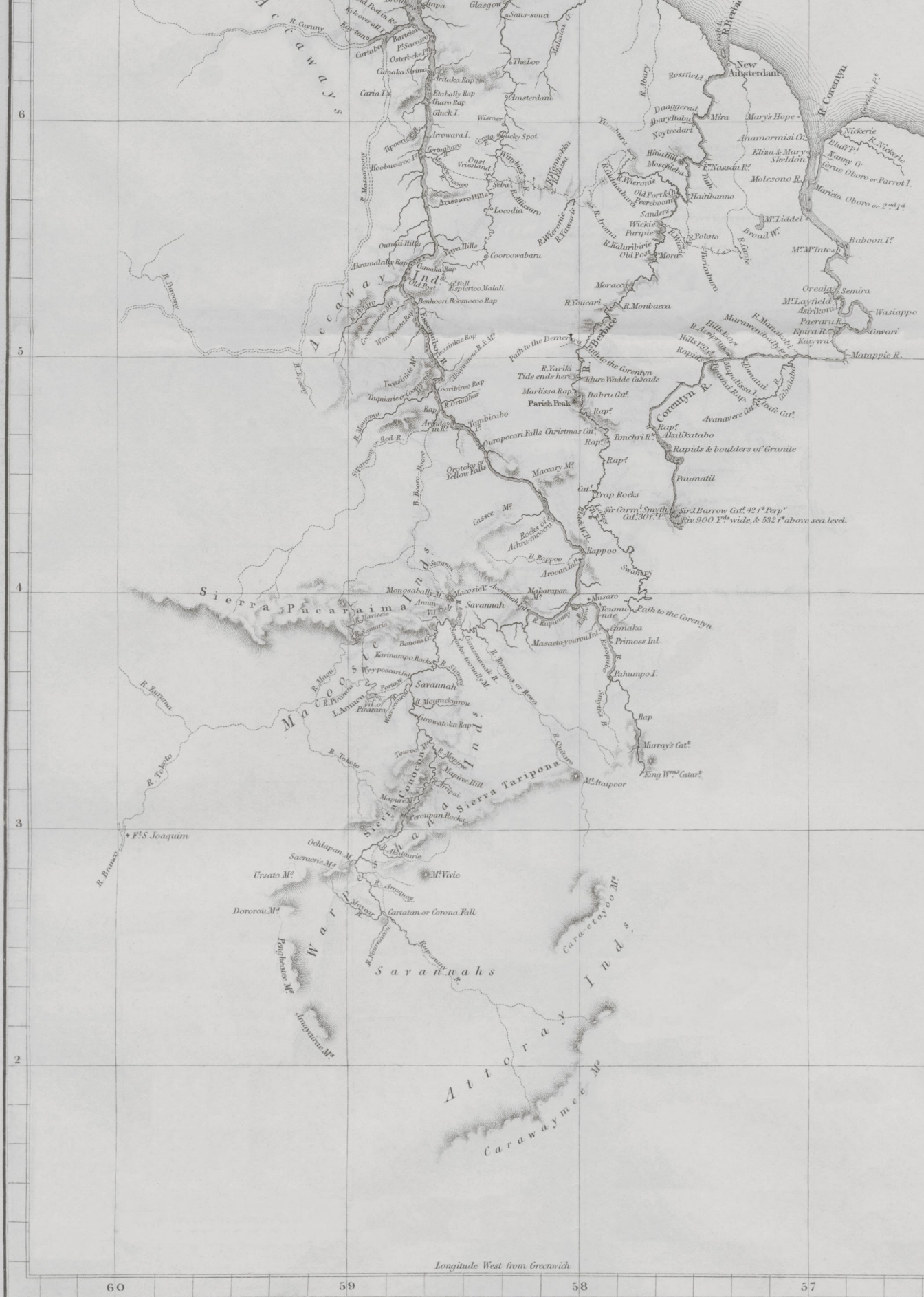

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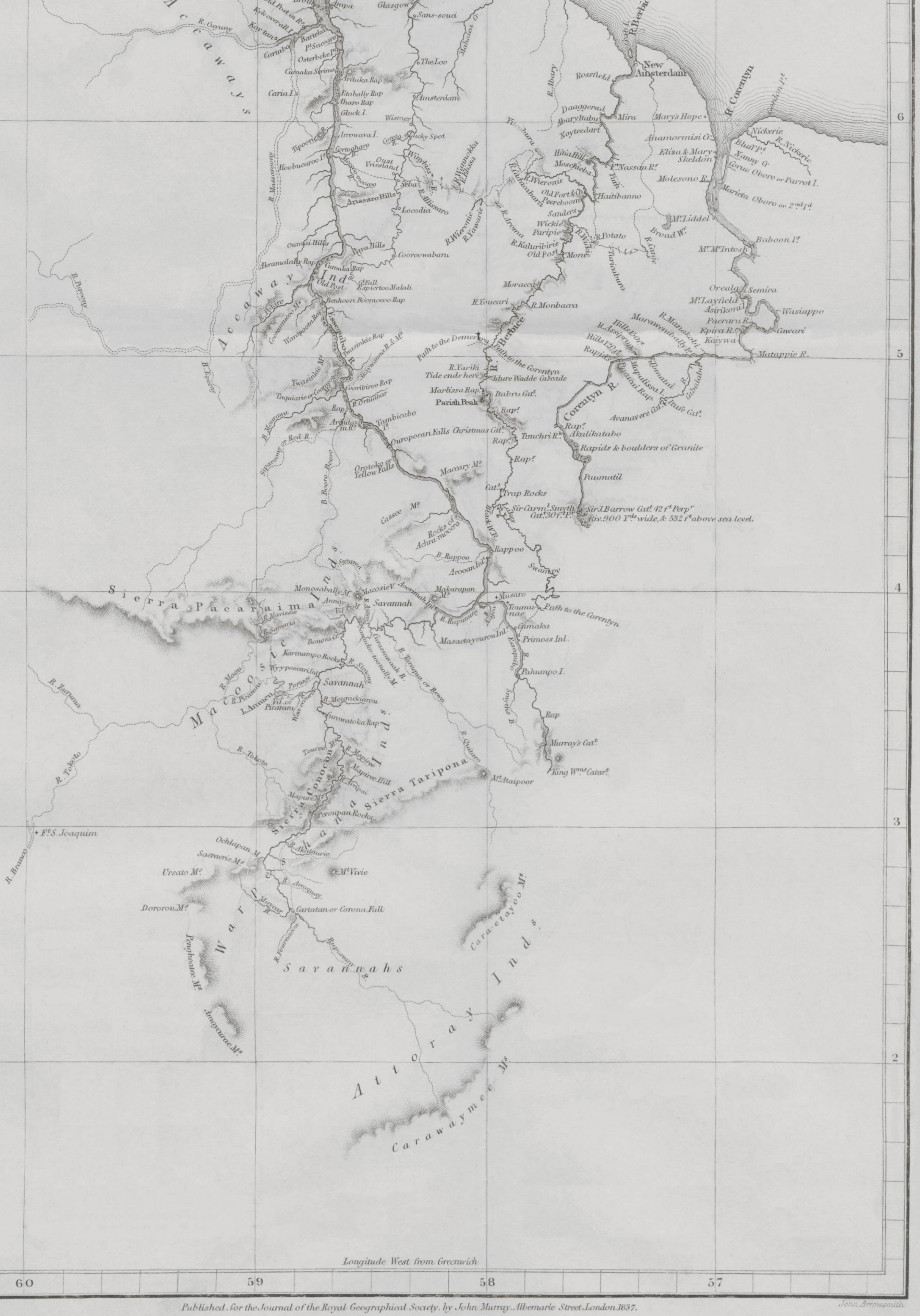

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John Arrowsmith